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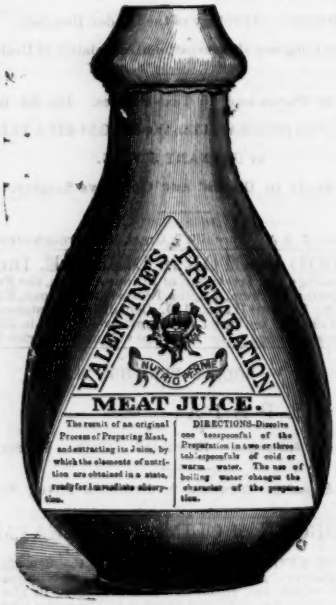
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A Lecture
ON
SOME POINTS IN THE DIAGNOSIS OF ORBITAL DISEASE.

Delivered at the London School of Ophthalmic Surgery on Oct. 21st, 1910,

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LADIES AND GENTLEMEN,—He who would accurately interpret the phenomena of disease or become an expounder of Nature's secrets must have something more in him than the mere capacity for taking pains; he should have something more than the mere clinical instinct; he should have an accurate memory of his past cases, combined with an intimate knowledge of the structure and functions of the parts concerned. In studying orbital disease from the clinical standpoint you will find that an intimate knowledge of the anatomy of the orbit and its adjacent structures is essential, whilst a groundwork of the embryology and ethnology of the face and skull will greatly aid you in a certain class of cases. But important as it is to cultivate these knowledges, yet it is just as important to cultivate what I call the clinical faculty, by which I mean the mental note-taking and continual mental comparison of one case with another of the same class. Written notes are of the greatest value, but for a diagnostician mental notes are more so, because they are ready to hand on the spot. The diagnosis of deeply seated orbital disease is often so very difficult that no knowledge of a set of symptoms is sufficient for the purpose, and you will find mental notes of similar cases you have seen and treated before of far more value to you than all the books you may read upon the subject.

Throughout the universe I apprehend that life is nowhere exactly the same; no sarcoma is exactly similar to its fellow in the same class; and so it is necessary for us to remember that we ought not to expect pathological processes in Nature to present the same picture, although they be similar and due to identical causes. Just as we know that the human race is continually altering, so we know that the presentation of disease to us is also. There is but little doubt that the severest forms of syphilis, as seen in the clinical departments to-day, are yet not the same, either in their severity or their sites of attack, as they were, say one hundred years ago. From the perusal of the writings of the surgeons of earlier years of the nineteenth century upon orbital cases, one is disposed to think that syphilitic swellings were vastly commoner then than they are now, for from one's own observations syphilitic caries and necrosis of the orbit is exceedingly rare, if we exclude the margin. Even the great Mackenzie, whose unrivalled experience was obtained when syphilis was rampant in Europe and notoriously badly treated—even he admits of only having seen one undoubted case of necrosis of the orbit from specific disease. Nowadays the sites for it are the neighbourhood of the lacrymal bone and the rim of the orbit, and even here I have never seen an exfoliation, but only gummatous thickening with a suppurating focus and perhaps bare bone. So that we may say that it is quite rare for the orbit to be attacked by syphilis in the form of gumma or necrosis, especially if we compare it with the cranium and its contents and the sphenoidal cavernous sinuses, where gummata are not very rare. It is, however, quite probable that all the hyperostoses of progressive nature and certain of the exostoses have been syphilitic in origin, for they are undoubtedly affected by large doses of iodide, sarsaparilla, and by mercurial inunction.

DIAGNOSIS.

For diagnosis methodical examination of your patient is very important, and in examining the orbit and head in general do not forget the habits of body and general constitution of your patient. In examining the orbit itself, when you have chronic cases of progressive proptosis to deal with and there is not much trouble with the lids, the following observations should be carefully made. The symmetry or asymmetry of the two sides of the face and orbits Quite a number of patients have not only a slight difference in level of the two orbits, but the eyes on the two sides are not the same distance from the mid-nasal line, and one may be more sunken in the orbit than the other. These points are important in measuring your patient for spectacles. The state of the skin and feel of the lids and rim of the orbit should be noted; the interpupillary distance, the mobility and proptosis of the eyeball; the site of headache, pain, and tenderness; is there pain if the eyeball is pressed very slowly and gently backwards? is there fluctuation? the state of the inner canthus and caruncle and lacrymal apparatus; and, lastly, do not forget to tap with your finger in the neighbourhood of the orbit, as you may elicit a valuable symptom thereby. In all chronic and very obscure cases it would be wise to get the opinion of the nasal surgeon upon the nose and accessory sinuses and antri, but you should systematically look yourself for pus beneath the middle or superior turbinated bones. If there is any there is almost certainly ethmoidal disease; if there is none it does not exclude it.

Now a line drawn vertically through the orbit, dividing it into an inner and outer half, will place two-thirds of orbital disease upon the inner side and one-third upon the outer, and disease is far commoner of the left than of the right orbit. But pus which has slowly more or less invaded the orbit from one side and become chronic and encapsuled may present itself as a tumour on the extreme opposite side, and leave the site from which it sprang, to all appearances, quite natural. I recently had a beautiful example of this in the wards of this hospital. The patient was a woman, who came to the hospital with a circumscribed, fixed, firm, smooth, painless swelling at the upper and outer margin of the right orbit, about as large as a walnut, apparently attached to the bone. The whole of the orbital contents were elsewhere normal. I dissected it out, and just as I had nearly finished I found it to be a collection of pus in a densely thickened capsule connected by a long, but very narrow, sinus-like tract, with the frontal sinus which was distended with pus and greatly diseased. The patient did well. In quite a number of these frontal sinus cases the first sign is a tumour presenting at the upper and inner angle of the orbit, or even bulging the whole of the inner wall. A larger percentage of disease and swellings of the inner half of the orbit is due to acute or chronic collections in the ethmoid, frontal, and sphenoidal sinuses, and to caries and necrosis of the lamina papyracea. A sarcoma or exostosis occurring within these is comparatively rare, but I here show you the photographs of another patient with enormous broadening of the face from a sarcoma in that region upon whom I operated in the hospital six weeks ago. The interpupillary distance was 75 mm., and yet mobility of the eyes was excellent and diplopia only present in the later stages of the malady, but each fundus showed papillitis.[1]

But these ethmoidal and sphenoidal diseases do not always present themselves to us as cases of orbital disease *per se*, such as cellulitis, abscess, necrosis, caries, tumour, &c. They quite as frequently cause more concealed trouble, and insidious trouble because it is concealed. For instance, there is one sphenoidal cell that is larger than the rest, and it is in direct contact with the optic nerve, since it forms part of the wall of the canal through which it runs. Some collections in the ethmoido-sphenoid suppuration expand this and press upon the canal and cause retro-bulbar nerve trouble, which ends in optic atrophy. It is my desire to try to diagnose this form of acute or chronic retro-bulbar neuritis early, as the patient may be saved from certain blindness thereby.

Now of recent years quite a number of observations have been taken upon the blind spot of Marriotte, and I here show you a roughly made board I had made three years ago upon which fairly accurate measurements of the normal and the diseased blind spot can be obtained. The blind spot can be measured in various diseases of the optic nerve, and always gives very reliable information as to the expansion of the nerve or its head. You will find that the diagram is generally vertically oval, slightly at first, and more so the longer the duration of the disease; and then if a central scotoma should form, as is not uncommon, the two blind spots are sometimes bridged across by a kind of dumb-bell connexion. Later still, a large universal scotoma may

[1] The patient has now (Jan. 16th, 1911) an interpupillary distance of 88 mm. and much broadening of the face and head.

precede total blindness unless something is done to relieve the patient. One more instance of the disastrous effects of chronic purulent conditions of the sinus and teeth and toxic absorption from them may be mentioned in the serous choroiditis, serous cyclitis, and sometimes chronic retro-bulbar atrophy which result from long-standing neglected diseases in these situations. Hardly a week passes in this hospital but that we could see one or other of the above diseases caused by oral sepsis or nasal and sinus disease.

More than half of the cases of orbital cellulitis arise from disease spreading from the inner wall of the orbit, which in the living subject is as thin as notepaper.

ORBITAL CELLULITIS.

Let us consider, then, acute orbital cellular inflammation. The patient has general symptoms of malaise and fever, with drowsiness and marked irritability of temper in adults, which needs to be taken into account in treating the patient. There is acute, throbbing pain, tenderness, much swelling of the lids, with brawny œdema in some cases and marked engorgement of the veins in others, which may pass beyond the region of the lids to the forehead, temple, or cheek. The lids are generally separated by chemosed tissue, if severe, although the ptosis and capacity for great stretching of the upper lid covers the cornea. The proptosis is not merely of the eyeball, but in most cases of all the orbital contents, and is generally downwards, outwards, and forwards, because the commonest cause is trouble at the upper and inner angle of the orbit. It is displaced up and in, in maxillary inflammation. The chemosis is clear and gelatinous, there is no discharge, but the edges of the lids may be a little gummy. The eyeball, as a whole, is normal, the cornea clear and bright, the pupil natural and reacting to light; but mobility of the eye may be entirely abolished, and is always limited. The fundus is normal in the early stages, and for a long while, except in pyæmic and metastatic cases, when papillitis is common. If tension is not soon relieved by nature or by art the eyeball may be strangulated and mortify or be perforated, which is exceedingly rare, and then the parts shrink up or the septic process may spread backwards and start a fatal meningitis or septic sinus thrombosis; but it generally subsides under appropriate care and leaves a useful eye, with perhaps a little ectropion or entropion, if the eyeball is not affected. I have never seen a permanently paralysed muscle follow an orbital cellulitis, except ptosis, but optic atrophy frequently supervenes some months later. An abscess of the orbit points through the upper lid.

Orbital cellulitis should be early and freely treated by incisions, and careful search should be made for the pus, which is generally to the inner side of the median line and above; but be careful of injury to the levator palpebræ and causing permanent ptosis; be careful of injuring your pulley or its muscle; be careful of injury to your ciliary ganglion or optic nerve—nature hardly ever injures it, it is the surgeon; and lastly, be careful not to injure the veins, thus setting up septic phlebitis. It is safer, unless pus is actually pointing, to make your exploratory incision from the outer side.

Inflammation of the cellular tissue of the orbit may be due to blood states and metastatic inflammation. It is commonest in children and the aged, but it is far more usually due, at all ages, to trauma and spreading inflammation from contiguous cavities, especially the nasal and accessory sinuses of the skull, the antrum of Highmore from disease of the bones *per se*, from oral sepsis, especially Riggs's disease, or due to erysipelas or to carbuncle.

With regard to trauma it is surprising how trivial an injury will sometimes start a virulent orbital cellulitis; the opening of a Meibomian cyst has caused it, and it has frequently followed excision of the eyeball when there has been a conjunctival discharge, or panophthalmitis, at the time of the excision, which has terminated fatally.

It has been my experience to find that patients with orbital disease give histories of their trouble which can generally be relied upon. In other diseases of the body patients are not always to be believed; but I would suggest to you that in no other region of the body will you find the history of more aid to you than it will be in diagnosing orbital disease, and in doing so I would say that in my experience it is safe to rely on one's patient for an accurate account of the events and their sequence. They are far more reliable in giving details about orbital disease than they are in those of maladies of the eyeball. In spreading inflammations in particular the patient has given very definite and valuable localising aid in all the cases I have notes of. He has aided me in forming a conclusion as to where the process started and as to its mode of spread in all of my cases but one. Let me give you two instances of orbital cellulitis spreading from ethmoidal sinus disease. They had both been long under the nasal surgeons. In one the man stated definitely that he had felt something go on to the inner side of the eyeball whilst blowing his nose, and the eye got painful an hour later; and on making an incision on the fourth day I found the lamina papyracea eroded and a hole in it, and pus and mucoid secretion came away. In the other case there was the usual history of nasal trouble and aching at the root of the nose and between the eyes, but no history of the patient having felt anything give way. In this latter case there was pus in large quantity along the inner wall, but no bare bone or bone pain, and I believe the process was not due to direct extension by expansion, but probably along the perforating vessels. It is important to get your patient to try to find which way he can move his eyeball with the least pain. At first he will tell you that he cannot move it, especially as he cannot open it. Sometimes this is true, and then you lose a valuable aid to diagnosis. But more often, although intensely swollen and exquisitely tender, especially if you make him rotate the good eye well to one or other side, he will say that there is more pain when he moves it, or attempts to move it, in a certain direction. The direction of the pain is generally the direction of the lesion, and is not so valuable when the trouble is deeply seated about the apex. The septic processes which spread from the antrum and perforate the orbital plate of the superior maxillary bone are less successfully treated than the nasal side cases because of the extensive necrosis and prolonged suppuration, the absence of the natural drainage to be got from ethmoidal cases, and from the great tendency to meningitis and sinus thrombosis. They want thorough and energetic treatment more than any other spreading inflammatory cases I know of. They may occur in quite young babies, for we had one in the hospital this summer. Here are a few notes of it:—

The patient was a female child, aged 6 weeks, who had been well for the first five weeks of life. The mother stated that six days before bringing the child to the hospital there was a discharge from the roof of the mouth, the left nostril, and the left upper alveolus. Two days later the left eye became swollen and prominent, and the child cried continually. The case was admitted to the hospital by the house surgeon, and when I saw the patient there was marked orbital cellulitis, swelling and œdema of the lid, and the eyeball was dislocated upwards and inwards. There was considerable chemosis, and apparently fluctuation of the lower and external part of the orbit. The pupil was dilated, but it reacted to light. The cornea, and apparently the fundus, were normal. The right eye was normal. The left ala nasi was pushed down and flattened by the orbital cellulitis and maxillary swelling. There was pus from the left nostril and from the left upper alveolus, of a greenish, thin nature. Under chloroform an incision was made at the outer portion of the protruding inner surface of the lower lid, and about an ounce of fœtid bone pus escaped. Dead bone could be felt downwards and backwards under the eyeball, showing the whole of the orbital surface of the superior maxillary bone to have been perforated and absorbed by pus which was probably from the antrum. Next day the swelling subsided considerably and the cornea was clear, but two days afterwards the swelling returned, and the right eyelid became very swollen and the eyeball considerably proptosed. Twelve hours later the patient showed all the signs of meningitis, which increased until she died two days later. In all the patient was in the hospital eight days. The post-mortem examination was made, and besides slight basal suppurative meningitis there was bilateral thrombosis of the cavernous sinus on either side, and the circular sinus and ophthalmic veins contained septic matter, the lateral sinus containing fluid and dark blood. The tissues in both orbits were infiltrated with pus.

The above is the youngest case on record of bilateral thrombosis of the cavernous sinuses, and, like all other cases of septic thrombosis of these sinuses on record, it terminated fatally, for, as far as I know, not a single patient in history with this disease has ever survived. The case is also of

paramount importance, since it shows how a trivial septic process in a baby's mouth may cause a serious and a fatal meningitis through the means of septic absorption from the oral cavity.

The orbital cellulitis sometimes set up by tuberculous bone disease is never a very tense one, nor does it cause the brawny swelling of the lids that is found in idiopathic and septic cases, whilst the eyeball is not fixed and can generally be moved by the patient, and there is far less pain and tenderness, and probably no febrile state. But not always, for I have notes of a case of a child who had quite high fever all the while—about four to six weeks—until the pus was evacuated and the necrosed bone removed, yet the orbital cellulitis was never very tense, the eyeball, although greatly proptosed and chemosed, could be moved; and there was no tenderness except on separation of the lids, whilst of course some patients get a temperature from merely nervous excitement.

DIFFERENTIAL DIAGNOSIS.

Of the troubles that cause difficulty in diagnosing whether we have true orbital cellulitis at all, acute purulent conjunctivitis, acute thrombosis of the cavernous sinus, and acute lacrymo-adenitis, of these the second, cavernous sinus thrombosis, is most likely to cause great difficulty where there is no present, but only past, external ear disease. I have twice known the patient to be operated upon for orbital cellulitis when the cases have been those of sinus thrombosis. Here the diagnosis should not be difficult if we take a larger view of the patient and do not confine ourselves to the swollen orbital contents.

In the first place, sinus thrombosis is very sudden in onset, not very painful, if at all, in early stages; œdema of the forehead and over and about the mastoid is nearly always present, and in one of these cases tapping the mastoid elicited pain and tenderness. Secondly, the chemotic tissue protrudes between the lids more than usual, and the skin of the lids is soft and supple. Thirdly, since the veins are blocked, and the only possible means of draining the eyeball is through the communication of the angular with the facial and through the spheno-maxillary fissure with the tributaries of the internal maxillary, one expects to find some symptoms altering or abolishing vision, as well as ophthalmoscopic signs, if the upper lid can be sufficiently elevated. Engorgement of the retina and blindness should always be searched for in orbital cases. I have never known them in orbital cellulitis, except in the last stages, when fibrotic changes take place, but I have seen hæmorrhages and œdema of the retina in all my cases of cavernous sinus thrombosis and temporary reduction in vision, as well as permanent blindness in some of them. One case of non-septic thrombosis has always been vividly fixed upon my mind, and I will give you a short note of it.

The patient was an elderly gentleman, with malignant disease of the larynx, for which he was being treated by Sir Felix Semon. The patient suddenly had pain and swelling of the left orbital contents with great proptosis and chemosis, and only slight œdema of the lids, but by slowly and gently separating them the pupil, which was dilated, could be seen to react to light slightly. His vision was 6/36 and J. 14, with glasses. There were hæmorrhage and œdema of the retina. He had œdema over the mastoid and of the forehead on that side, very well marked. The diagnosis made by me was thrombosis of the cavernous sinus. In a few days' time the sight gradually came back, and on the eighth day was 6/9 and J. 1. Collateral circulation was sufficient to restore the retinal circulation, whilst the proptosis and swelling gradually abated. The patient died from the cancer of the larynx six weeks later. Non-septic monolateral cases of thrombosis of the cavernous sinus very frequently recover. I have notes of 14 cases, in all of which the patients got quite well.

The diagnosis of orbital cellulitis is often made in cases of blennorrhagia of the lacrymal sac and gonorrhœal conjunctivitis, but the history, the presence of a purulent discharge, combined with the absence of proptosis of the eyeball, should be sufficient for diagnostic purposes. The swelling and brawniness of the lids and the chemosis may be extreme, but you will on careful inspection find the eyeball sunken at the bottom of the chemosed tissue or normally placed—never displaced either forward or laterally or upwards, as it always is in orbital cellulitis. One notices, however, that in gonorrhœal ophthalmia of the severer types the eyeball is sometimes displaced a little down owing to the pus collections in the conjunctival folds above and to the thicker base of the upper lid. I have seen a child who was a mass of scrofulous disease of glands of the neck and several bones of the chest and the left scapula get dacryoadenitis, with intense swelling of the lids, which subsided in a week, leaving the gland chronically enlarged and palpable and riddled with pus. At first this case looked like one of cellular inflammation. I have seen acute œdema of the lids in children and young adults follow urticaria, and in both cases they had provisionally been diagnosed as orbital cellulitis. I have known retro- as well as intra-orbital hæmorrhage, with severe proptosis and chemosis, following blows, coughing, and scurvy-rickets, to be diagnosed as orbital cellulitis because of the proptosis, chemosis, and swelling. But the absence of inflammatory symptoms, of tumefaction of the lids, and of fever, with perhaps, but not always, the presence of effused blood into the lids or conjunctiva, ought to lead to a correct diagnosis; but here, as in all orbital disease, history is everything, for trauma, vascular hypertension as in coughing, or blood states, as in scurvy, would come to one's aid if necessary. Actinomycosis has once occurred in the orbit as a chronic abscess and caused difficulty; whilst in cases of anthrax, malignant pustule, and small-pox, although they may affect the orbit, yet I have never seen them. Not infrequently babies or children are brought to us with undoubted orbital cellulitis and no assignable cause can be discovered. You are aware that the sense of fluctuation in orbital disease is very deceptive, yet you make an incison and probe deeply, and in spite of your certainty of fluctuation you find no pus. You foment and purge and the inflammation passes off without a drop of pus ever showing itself. The same kind of cellulitis occasionally comes in adults who have been run down by an exhausting illness, such as influenza, and again no pus is found, and it gets well. The probability is that some of these cases originate from simple thrombosis of the ophthalmic veins with resulting œdema of all the orbital tissues. I exclude those cases where pus does not come at the time of the operation but follows next day or two, for these are cases where we have only failed to strike the pus and it has subsequently burst into the track of your incision. It is this class of cases in young children which is prone to follow that disease which every mother looks upon as nothing, and which is yet a scourge in the world in a variety of ways and undermines the vitality of the organism and is the starting point of so much infantile tuberculosis—I mean measles. If preventive medicine could do away with measles I believe it would prevent one-tenth of children's eye diseases.

Before I leave orbital cellulitis there is a condition which, although not actually orbital cellulitis, yet is so intimately related to it that when you see it for the first time you are sure to diagnose "orbital cellulitis"—and that is metastatic panophthalmitis. You are all acquainted with panophthalmitis which follows the ingress of virulent septic organisms by trauma, especially that form following cataract extraction in certain diabetic patients with perforating ulcers, for these diabetic patients have special proclivities and predispositions for sepsis. There is a certain amount of cellular inflammation, though not of all the orbital tissues as a rule. But when metastatic panophthalmitis arises you have no injury to help you, and at first you may be nonplussed.

Metastatic panophthalmitis was known to Tenon, Junker Himley, and others, who early recognised the danger of excision of the eyeball in these cases. They thought the condition one of milk metastasis, because it occurred so often in the puerperal state. Later, many cases were ascribed to other general pyæmic conditions, especially from bone disease, small-pox, cerebro-spinal meningitis, typhus and scarlet fevers. Roth and Herrnheisser have since very carefully studied the malady. The symptoms are much the same as those of traumatic panophthalmitis. It starts with pain, which is a continual throbbing, and the whole of the fifth nerve on that side aches. It is followed by rapid swelling, redness, and œdema of the lids, proptosis, chemosis, and exquisite tenderness of all the tissues, whilst the eyeball is fixed straight forward and cannot be moved. The diagnostic points are very important and are as follows. 1. The pupil loses its brilliant blackness and becomes dull grey or actually yellowish-green; there is a semi-dilated, immobile iris, with exudate on and in it, and a turbid aqueous

in a deep anterior chamber, because the septic process has spread from retino-choroiditis and irido-choroiditis to a general panophthalmitis. 2. The upper lid can generally be more easily manipulated. 3. Early and total loss of sight. 4. Glaucoma early supervenes with rupture sooner or later of the globe just outside the limbus with escape of purulent contents and subsequent shrinkage. Sometimes the course is more chronic and the case ends in phthisis bulbi without rupture. It may be bilateral, but it never causes sympathetic ophthalmia.

You will thus see that the eyeball, its position and condition, especially that of the media, will soon show you, with the history of the patient, that it is metastatic panophthalmitis with which you have to deal, and not orbital cellulitis *per se*. True it is that orbital cellulitis may cause by strangulation of its blood-supply complete mortification of the eyeball, but it is exceedingly rare, and I have never seen it. But it is a last result only and therefore does not come into our region of diagnosis.

Now the fat of the orbit varies somewhat, not only in form and consistency, but also in amount. In the outer and lower half of the orbit you will find it firm and compactly enclosed in compartments of fairly dense strands of connective tissue, whilst that surrounding the sheath of the optic nerve is looser, more finely fibrillated, and more oleaginous, and only becomes firmer and has thick fibrous strands in the intermuscular intervals. A knowledge of this is very important, as in cases of periosteal trouble, where cellulitis is quite secondary, and pus easily riddles and absorbs this thin fat; the pus is far back around the nerve, whilst in the upper and outer and lower portions of the orbit, where the fatty tissues are much more compact and firm, they are but slightly affected by the exudation of inflammatory products. You will remember that the eyeball rotates by a complicated mechanism in which Tenon's capsule plays quite a secondary part. The fatty tissues and muscular cone move as a whole at the same time that the eyeball moves in Tenon's capsule. Now a knowledge of this helps us in diagnosing the probable cause of orbital cellulitis in periostitis, panophthalmitis, and so-called idiopathic cases. For in periostitis the eye is generally well deviated to the opposite side of the lesion, and is capable of motion in a certain direction without much pain. But pain is very severe on even the gentlest pressure backward or to the side of the lesion, and when the typical boring pain of bone disease comes on at night the eye may be observed to rotate. In panophthalmitis the affection of Tenon's capsule causes the eye to be rigidly fixed in the median line and no motion of the eyeball is possible, owing to acute tenonitis and the general involvement of the whole of the orbital tissues. In idiopathic cellular inflammation, whilst there is not much, if any, mobility of the globe, the lids are uniformly and intensely congested, and no one part of the orbit is more markedly affected than elsewhere, as is often the case in periosteal disease, and the eyeball and Tenon's capsule are nearly natural.

TUMOURS AND SWELLINGS OF THE ORBIT.

In considering diseases of the orbit it is well to remember that the actual cavity of the orbit, the eyeball of which normally occupies only one-fifth, may be either expanded, as it is in long-standing intra-orbital disease, or contracted by being encroached upon by tumours and swellings from without or within the skull. It is surprising how much pus it can contain in the living subject or how many years a foreign body may be lodged in it without causing trouble.

I show you here the photograph of a child (Fig. 1) who had a lympho-sarcoma of the left lacrymal gland which weighed 2¾ ounces and had greatly expanded the orbit on that side, although there was no infiltration of the orbit—for you will remember that there are no lymphatic vessels in the orbital tissues—except the lids and conjunctiva. Here is another, of a girl also, who had the capacity of the left orbit very greatly encroached upon by a large exostosis of the temporal bone, and the proptosis that is present is due to it; the eyeball is normal, the vision good, and mobility free, but there is diplopia in certain positions. When the orbit is invaded by malignant growths from the skull, especially those arising from the sella turcica in that region, they do not have time to expand the orbit, but cause rapid proptosis without much pain. Morax had a most valuable case in 1904 of sarcoma of the temporo-sphenoidal lobe in a man of 40 in which a process of the growth had penetrated through the temporo-sphenoidal fissure into the right orbit, and which, besides causing marked proptosis, homonymous hemianopsia, and a relative hemiopic pupillary inaction, with retained normal vision, had the peculiar sensations of perverted smell. The patient died six months later, and although the hemiopic pupillary signs remain permanent the necropsy showed that mere pressure on the optic tract was sufficient to cause the symptoms without there being evidence of structural alterations, as careful staining of the tract and visual centres revealed the parts to be normal.

Of the slowly growing swellings of the orbit we have chiefly chronic periostitis, abscesses, exostoses, gummata of the soft parts, and the cysts and new growths. Chronic circumscribed periosteal abscess, in my experience, takes place in three situations: either it is along the inner wall or at the apex, and then it is in persons under 35, and the patients are kept awake at night by pain and eye-ache; or it

FIG. 1.

Lympho-sarcoma of the lacrymal gland.

occurs in persons of about 40 years of age or older, and then is situated in the middle line of the orbital plate of the frontal bone, just behind the overlapping bony rim. Here it causes a characteristic tumefaction of the centre of the upper eyelid and eyebrow, perhaps is tender, but not often painful, and does not interfere with orbital structures or the ocular movements. When the extreme rim of the orbit is attacked it is generally in children with a scrofulous or traumatic history, and occurs at the outer part over the lacrymal gland or malar bone. Exostoses, if not too deeply situated, are fairly easily diagnosed by their extremely slow growth, nodulated surface, if this can be felt, and ivory hardness. They arise mostly from the sutures or in the sinuses, are deeply situated, and at first cause but little trouble, but later optic atrophy and proptosis, and may necessitate excision of the eyeball. They are painless in the early stages. I excised one from the rim of the orbit in the region of the orbital notch recently. You will find in deeply seated tumours of the orbit that it is very seldom that one can satisfy oneself as to the nature of them. The only possible way to palpate them is to thrust the smallest finger firmly but gently into the conjunctival sac after instilling cocaine. Valuable aid may be obtained in this manner. Orbital tumours may be solid or cystic, innocent or malignant.

Solid tumours of the orbit are much more deeply seated in my opinion than the cystic. They are fibromata; lymphomata which are often symmetrical and associated with lymphatic nodules in other organs of the body; endotheliomata and sarcomata. Carcinoma has only been found as metastatic growths and is extremely rare. The fibromata, lymphomata, as well as the lipomata, which latter are mostly seated anteriorly at the upper and inner angle, are all of them slow-growing, benign, painless, and tenderless swellings which cause slight proptosis and diplopia but nothing more. On the other hand, a patient who comes with a sarcoma comes complaining of pain in the orbit or eyeball, or both, and has tenderness on pressing back the orbital contents, and he will tell you that he is conscious of having "something growing behind the eye." Sarcomata early invade the orbital muscles and interfere with the ocular movements by invasion long before pressure does (Fig. 2) But some of the sarcomata, which arise in or about the

sheath of the optic nerve, and which cause proptosis straight forwards, because they are within the cone of muscles, cause early optic atrophy and amaurosis, are less malignant, and do not grow so rapidly or have so great—if any—tendency to spread to the muscles. Many pathologists now classify these tumours, which were formerly called myxofibromata, among the endotheliomata, because Treacher Collins and others have found no mucoid or myxomatous substance in the cases they have examined, but only general œdema of the tumour.

There is a chronic hyperplasia of the tissues about the optic nerve and of the interstitial substance in old syphilitic patients, especially those who are the subjects of cerebral syphilis and pachymeningitis, which may cause not only proptosis, optic atrophy, and blindness, but pain also. This pain is associated with other morbid cephalic sensations, and is probably part of the pachymeningitis or periostitis. The nerve may be three or four times its normal thickness and very hard. Some tumours of the optic nerve have grown so slowly as to cause flattening of the antero-posterior pole of the eye, and with resulting hypermetropia.

The diagnosis of cold and slowly-growing swellings of the orbit is largely aided by a knowledge of embryology. You will find meningoceles and encephaloceles nearly always at the fronto-nasal process, and very rarely along the ethmoid. They are congenital, smooth, swell on coughing and crying, and may be emptied by gentle pressure. They do not call for surgical interference as the patients are the newly-born, very debilitated, and soon die. The dermoids are generally either at the upper and outer angle of the orbit or at the inner wall, or on the eyeball itself. They may contain teeth, but I have never known them contain more than hairs and sebaceous matter, or an oleaginous and green fluid. There is a case, I am informed, at Leipsic University, of a teratoma protruding from an orbit, apparently a limb, but these cases are mere curiosities.

Dermoids of the orbit are smooth, nearly circular, semi-solid, mobile swellings which always appear more superficial than they really are; and in two of my cases where the growths were along the inner wall they sent long bands of

FIG. 2.

Sarcoma of orbit.

firm tissue backwards, and in one case a process went under the internal rectus muscle which had to be divided at its insertion and afterwards re-attached in order to thoroughly extirpate the growth. Great care is necessary in operating upon these dermoids, as sometimes the processes project into the cranial cavity, or through the sinuses, or are attached to large veins. But they are quite operable, and leave the eyeball and orbit with no defect worth mentioning afterwards, either functionally or cosmetically. There are not 20 hydatid cases on record and only half that number of cysticerci; they fluctuate and grow slowly. Filaria loa has occurred. The two other cysts that are not uncommon are the dacryops, which is easily diagnosed, since it is a lid tumour and can be found connected with the lacrymal gland, a duct of which has become enormously distended. Sometimes fluid may be squeezed from it. The other is a congenital cyst presenting along the lower eyelid, pushing it forward, and projecting also well backwards beneath the eyeball. It is connected with the globe and sometimes with the vitreous, and has arisen from the defective closure of the choroidal fissure. I here show you the section of such a cyst and the eyeball which I removed three years ago. My colleague, Mr. Brooksbank James, has a beautiful case attending the hospital now, in which the ophthalmoscope shows a connexion between the cyst and the eyeball.

The swellings in the orbit most likely to be confounded with the cysts in the early stages are the vascular tumours—the nævi and nævo-lipomata and the arterio-venous aneurysm. The nævi take two forms—the soft compressible, and the firmer, which may be slightly cystic. The first are by far the commoner, and may be connected with the veins of the lids, but are generally entirely within the orbit, and arise within the cone of muscles above or below the eyeball, and rarely to the nasal side, and protrude between the muscles into the orbit, projecting beneath the conjunctiva. They are all encapsulated, lobulated, and swell up on forcible expiration or on drooping the head forwards. They can be partially emptied on pressure, are not painful or tender, and do not interfere with the eyeball movements. They appear first at puberty and take years to grow, but cause great, quiet proptosis and distort the anatomy of the parts without loss of vision. The more solid ones have no impulse or expansion upon coughing or lowering the head, but they contain old and organised blood-clots, many large calculi, and sometimes small cysts. Some of you have no doubt seen the girl whose photograph I here show to you. She is 14 years of age, has large symmetrical nævi of the upper eyelids projecting into the orbits, which swell up greatly on lowering the head for a few seconds. The mother states that they are much larger and firmer at the menstrual periods. I intend to operate upon both of these.

In cases of arterio-venous aneurysm, or aneurysm of the internal carotid, or aneurysm of the extra-orbital portion of the ophthalmic artery, there is, even in the earliest stages, a continuous bruit, of which the patient is conscious, and which you can hear with the stethoscope. The patients nearly always give you the history of "something having gone off bang" in the skull, and they state that they continually hear the noise afterwards; it even keeps them awake at night. But they only come to you days or weeks later, when proptosis and chemosis of the eyeball appear. If you lay the flat of your hand on it you can feel it pulsate and expand. There is sometimes pain, but the sight is retained until very late in the disease. The patients generally give a history of syphilis or trauma. Sometimes a large venous dilatation will give pulsation and a bruit, but the great point to remember is that the bruit intermits in venous cases, there is no chemosis, and the contents of the orbit are more compressible, not painful, and the patient is not conscious of noise in his head.

Lacrymal gland tumours sometimes grow to a great size before they cause symptoms or physical signs. They mould themselves to the deep recess behind and above the outer rim of the orbit and at first extend backwards; afterwards the hard, sharp, and sometimes notched edge can be felt through the upper eyelid. They are rarely tender or painful unless inflamed, but sooner or later cause displacement of the eyeball and contents of the orbit downwards and inwards with enormous stretching of the upper eyelid. The photograph I showed you is one of a girl, aged 12 years, with marked orbital distension and proptosis caused by a lymphosarcoma of the left lacrymal gland. The pre-auricular gland, as well as the parotid lymphatic glands on that side of the face, were much enlarged. I excised the growth, which weighed 2½ ounces, and the glands, and the patient did well and returned home. But four months later the patient had a recurrence of the cancer in the pharynx and parotid, from which, I was informed, she died, but it did not recur locally. The commonest swellings of this gland are either simple hypertrophy or endotheliomata. Excision is the treatment. Whilst it is almost unknown for tumours of the orbit to invade the eyeball, the reverse is by no means uncommon. They may perforate the globe at any site by thinning and absorbing the sclerotic, but the commonest place is by invading the optic nerve, or through its foramen in the sclerotic, or they perforate the limbus to the outer side of the cornea after causing glaucoma, and present as one variety of the fungus hæmatoides described by Wardrop. They are nearly all cases seen in quite young children and are gliomatous, and it is a late

stage of the disease when they are first seen by the surgeon, but the soft and thin state of the sclerotic coat in children, which easily yields to internal tension, predisposes to orbital extension. The photograph of the case I show of an enormous tumour projecting from the left orbit of a little Chinese girl was one of secondary recurrence after excision of the globe for perforating glioma of the retina.

Lastly, I wish to refer to some cases that I have seen at odd times of obscure and recurrent pains in the orbit, in which there has been no definite swelling, or proptosis, or tenderness, or which, if present at all, has been quite transitory and lasted less than 24 hours. One class of cases belong to the category of so-called ophthalmoplegic migraine and is associated with hemicrania, giddiness, slight ptosis, and perhaps paralysis of an extra- or intra-ocular muscle. They occur in youth, and patients get well upon alterative treatment, and about a year later recur. Then there is another in the so-called angioneurotic œdema, but here there is some slight swelling of the lids, which in one case occurred upon excitement after dancing or going to a theatre. Lastly, some rheumatic patients get intractable pains in the orbits which are quite independent of errors of refraction and muscular anomalies. They may be due to our old enemy, a sinus, especially the sphenoidal, and this is not improbable if the pain is deeply situated between the eyes. There are other sets of orbital cases, such as exophthalmic goitre, the cases of increased intracranial pressure with proptosis; the cases of tenonitis, the cases of enophthalmos which I should have liked to discuss, but my allotted time for this lecture has run out, and I must close.

TRANSVERSE FRACTURES OF THE PATELLA, WITHOUT SEPARATION OF THE FRAGMENTS.[1]

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THE causes of separation of the fragments of a transversely fractured patella, and the causes of failure to obtain bony union in cases in which much separation has occurred, have been of the greatest interest to surgeons for some considerable time. The subject was first studied scientifically by Gulliver (1), whose classical experiments laid the foundation of our knowledge of this subject. He performed 11 experiments on dogs and rabbits, in five of which he divided the patella transversely together with its aponeurosis, and in the other six divided the bone only, leaving the aponeurosis intact. In the five in which the aponeurosis was divided there was separation of the fragments, and only fibrous union resulted. In the six in which the bone only was divided there was no separation of the fragments, and firm union was the result in all. The union was bony in five of these cases, but in one patella, removed only 27 days after the experiment, there was short ligamentous union only and no new osseous tissue had appeared. Amongst Gulliver's conclusions we find the following: "Osseous union is simply the effect of immoveable coaptation of the fragments, the provision for which, in certain forms of fracture, is the integrity of the aponeurosis in front of the bone." Gulliver, therefore, so long ago as 1837, only just failed to grasp fully the pathology of the failure of bony union in most of these cases. He knew that the rupture of the aponeurosis was the primary cause, but missed the fact, observed and pointed out by Macewen (2) nearly fifty years later, that the aponeurosis does not give way opposite the seat of fracture, with the result that the fringe attached to one part, generally the upper, falls between the fragments.

Macewen's clinical observations established the fact that the interposition of the præpatellar fibrous structures between the fragments was the cause of failure of bony union, and his deductions from his observations drew a picture of the pathology of transverse fracture of the patella which has been amply borne out by later observations made with greater facilities. Since the introduction of the X rays further proof has been forthcoming, and the recognition of transverse fractures, without any separation of the fragments, which could not be diagnosed with certainty before the days of skiagraphy, has furnished additional evidence of the truth of Macewen's statements.

From the ease with which such fractures can be missed and the frequency with which they are found when specially looked for, one is led to infer that before the introduction of the X rays many cases without separation of the fragments were not diagnosed at all, or only after a further trauma had "completed" the fracture. Support is given to this view by the following. Malgaigne (3) described the case of a man who, several years earlier, broke his left patella, and in February, 1839, fell and broke the union. In March, 1839, he died, and at the post-mortem examination it was found that the right patella had also been broken and united by bone. This fracture of the right patella had not been suspected during life, and Malgaigne's drawings (4) show how close the union was. Again, Broca (5, 6) described a case of fracture of the patella by direct violence in which the fragments were held together for 14 days, when a false step and the slight muscular exertion necessary to prevent a fall led to tearing of the aponeurosis and separation of the fragments. Broca also quotes two similar cases reported by Malgaigne. In one of them a medical man received a violent blow on the knee from the wheel of a carriage and continued to walk, but the next day, whilst descending a staircase, he slipped, made an effort to recover himself, and the fracture was "completed." In the second case a woman, who had a violent contusion on the knee, continued to walk, and at the end of a month, whilst making a slight exertion, separated the fragments.

Broca's case is of special interest, in that there was positive proof that the first fall really did lead to a fracture of the patella by direct violence, for at the subsequent operation it was found that the lower fragment was split into two halves, the strain at a later date having caused separation at the site of the transverse fracture.

In 1887 Macewen (7) himself related an interesting case. A young medical man received an injury to his knee in a football match. He could, however, walk without much difficulty. On examining his patella no line of fracture could be found. Still, osseous crepitus was detected on lateral movement. The patient went about with a bandage applied for three weeks. Firm bony union took place. Macewen first saw the limb some years later, when there was only a transverse ridge on the patella to mark the seat of the former fracture. After describing this case Macewen expresses the opinion that "it is highly probable that those specimens which are occasionally seen of osseous union after transverse fracture of the patella have been obtained from patellæ which were fractured without accompanying rupture of the præpatellar ligamentous structures," an opinion which has been endorsed since the introduction of the X rays and the frequency of the occurrence of such fractures has become more apparent. I would here mention a case reported by Vallas (8) in 1899, in which a man fractured his patella by direct violence and became unconscious. He therefore made no attempt to rise, and there was no separation of the fragments. No operation was performed. In 1905 the same man died from Ludwig's angina, and the patella was obtained. It was described by Vallas (9), and it was impossible to find a solution of continuity either by direct examination or by the X rays.

Since the use of X rays has become more of a routine measure in cases of possible fracture a few further remarkable cases have been reported, the most striking being three described by Wegner (10), who, by employing the X rays systematically in all cases of injury, was able to demonstrate some cases of fracture of the patella which had not been diagnosed before. Since they were the first cases of this nature which had been clearly described and demonstrated by skiagrams, I venture to quote them rather fully, especially as at present they are only on record in the German language. They are of the greatest interest when studied with some cases of my own which, as far as I have been able to find, are the only other similar cases clearly demonstrated.

In Wegner's first case a man, aged 35 years, slipped and "wricked" his knee. He did not fall, and after walking about 20 paces in considerable pain he was driven home. His medical attendant diagnosed an internal derangement, and treated it for four weeks with fixation, and then adopted massage. Two months after the accident the patient returned to light work, but had to abandon it, and four months after

[1] A paper read before the Surgical Section of the Royal Society of Medicine on Dec. 13th, 1910.

the accident he went to hospital. There was some atrophy of the thigh muscles, but the patella could be easily moved, was not enlarged nor uneven, and movements in the knee were free and without grating. A skiagram revealed a transverse fracture of the patella, and the plate which Wegner publishes shows that there was practically no separation of the fragments. With massage and exercises the muscles were restored and a good result was obtained.

The second case was that of a workman, aged 41 years, who is stated to have fallen on his left knee as he was carrying a chest of drawers downstairs, thinking he had only one instead of two stairs to go down. He walked home in spite of acute pain in the knee, stayed in bed for one day, and then went a 12-minutes' walk without stick or other help to see the surgeon, having to ascend two steps to get to the house. He walked home again alone. He was admitted to hospital three days after the injury. The effusion which was present disappeared after four weeks' compression, but on account of pain on the inside of the knee a further examination was made, and it was decided that the patient had a loose body in his joint. A skiagram, which Wegner publishes, was taken to decide this point, when it was found that the patient had also a transverse fracture of the patella, with practically no separation of the fragments, although a careful examination had failed to detect any pain at the site of the fracture, or any crack, or any separate mobility of the fragments. The patient had had no difficulty in extending the limb or raising it from the splint. The loose body was removed and the patient made an uninterrupted recovery. Bony union occurred, and on the X ray plate, with the exception of a small eminence on the anterior surface of the patella, Wegner states that there was no trace of injury.

The third case reported by Wegner is that of a workman, aged 44 years, who struck his right knee against the rung of a ladder which he was ascending. He felt a crack, but, in spite of acute pain, went a seven minutes' walk and ascended three storeys to his room, descended again to see the surgeon, again ascended, and two days later, on the advice of his medical attendant, went to hospital, again descending the three storeys alone. With the exception of a slight bruising of the soft parts at the sides and in front of the patella there was no sign of injury, and no sign of fracture of the patella, though this was specially looked for. A skiagram, which Wegner reproduces, shows the presence of a transverse fracture of the patella near its middle, without separation of the fragments. Treatment consisted of enclosure in plaster-of-Paris for six weeks, after which massage and exercises were employed. Convalescence was uninterrupted, and after three months Wegner states that no signs of a fracture could be detected by the X rays.

In 1900 Barker (11, 12) showed a somewhat similar case at the Clinical Society. This was a case of fracture by direct violence, with no palpable displacement, which was discovered by the aid of the X rays. The plate which was published, however, shows a separation of about a third of an inch, which is much more than in Wegner's cases or my own. Cauthier (13) reported a case of transverse fracture of the patella due to direct violence, without appreciable separation of the fragments, in which it was not until the man had been under treatment for eight days that a fracture was diagnosed. Cases which fall into the same category have been mentioned also by Thiem (14), Mayer (15), Doberauer (16), Smith (17), and Humblet (18). Trésoret (19, 20) has also reported a case of fracture by direct violence which should be included amongst those we are considering, for though the man went about his usual work in the field, walked two kilometres directly after the accident, and 13 kilometres the next day, he did not seek advice for more than two months afterwards, yet the union between the fragments was so narrow that it only measured some lines in breadth.

Blackham (21) has reported a case where the lower tip of the patella was broken off without the fragment being separated from the main part of the bone; and Bennett (22) showed at the Dublin Pathological Society a specimen obtained from the dissecting-room in which the same thing had occurred, though there was no history to the case. In Scudder's book (23) there is a tracing of an X ray plate of a similar fracture. In these cases of fracture of the tip of the patella the line of fracture is extra-articular, and separation of the fragments seldom takes place, since at this point the bone lies in the thick and strong patellar tendon. They have been fully described by Rödiger (24). Such fractures are very rare and of but little importance compared with transverse fractures through the body of the patella without separation of the fragments. The fractures of the tip of the bone get well without treatment; whereas in fractures through the body of the patella there is danger of some slight muscular exertion at a later date leading to separation of the fragments. Moreover, the joint being involved makes the injury a more serious one.

An extraordinary variety of transverse fracture of the patella is referred to by Reichel (25) and Magruder (26) in which the fracture is incomplete, not involving the cartilage. I have never seen a skiagram of such a case, which, of course, could not be diagnosed without the use of the X rays, and there do not seem to be any published. Such cases would be very like cases of incomplete fracture of the olecranon, which I have described elsewhere (27, 28), but if an incomplete fracture of the patella does occur it is much more remarkable than a similar injury to the olecranon. It must be remembered, however, that it is easy for the fracture to appear incomplete in a skiagram when the fissure does really extend through the whole thickness of the bone, and a careful examination with the screen should be made before the plate is exposed in order to avoid the chance of this error being made.

Now it is, of course, well known that cases of fracture of the patella from direct violence often do not result in much, if any, separation of the fragments. These fractures may be of any nature and the line of fracture may be in any direction. They are often comminuted, sometimes vertical, and in many cases transverse. It is not a matter for surprise, therefore, to find no diastasis in transverse fractures of the patella if due to direct violence, as in Wegner's last two cases and in other cases which have been quoted.

As in many ways a fairly typical example I will mention a case which occurred in the practice of the Middlesex Hospital.

CASE 1.—The patient, an able-bodied man, aged 28 years, was descending some steps into the street on May 26th, 1909, when he slipped and fell on his left knee. He got up without help and walked half a mile without stick or aid of any kind. On attempting to walk again, after resting for half an hour, he had much pain in the knee, and had to obtain the help of a friend to walk about a quarter of a mile to the hospital. He was seen by one of the resident officers, who transferred him to the out-patient department as a case of "traumatic synovitis" of the knee. The surgeon who saw him suspected the possibility of a fracture of the patella and recommended him for admission. The patient could move the knee freely, there was no palpable separation of the fragments, and no crepitus was obtained. A radiogram (Fig. 1) revealed a fracture of the patella without separation of the fragments, the line of fracture being mainly transverse, but the bone being slightly comminuted. There was considerable effusion into the joint and the patient was kept in bed for a few days, after which he had a light removeable plaster-of-Paris splint applied and went to the convalescent home. There massage and passive and active movements were carried out daily, and convalescence was uninterrupted. Bony union occurred, as the accompanying skiagram, taken on Dec. 20th, 1909 (Fig. 2), shows, and the man recovered with a strong knee and perfect movement.

This case, as I have said, is fairly typical and by no means uncommon, though, like many similar cases, it presented some difficulty in diagnosis. But the next three cases I will describe were much more remarkable and of the greatest pathological, as well as clinical, interest, for the fractures were caused in each case, as in Wegner's first case, by indirect violence—that is, by muscular contraction snapping the patella across the lower end of the femur—the well-named "tear fracture" of the patella.

CASE 2.—The patient, a man aged 43 years, a driver of a horse tramcar, was descending the stairs to open the door to some visitors on the evening of Jan. 15th, 1909, when he caught the heel of his boot on the edge of a stair. He stumbled, but with an effort recovered his balance. He noticed a slight pain in the right knee, but did not pay any attention to it, finished his descent of the stairs, and returned to his room, mounting two storeys. Next morning he noticed that his knee was rather swollen, but went to work. Owing to some pain and weakness in the joint he came later in the day to the hospital. He walked in with a slight limp, and, on examination, it was found that there was a little effusion into the joint, but otherwise no sign of any injury. The history being very suggestive of a fracture of the patella, particular attention was paid to the signs of this injury, and he was seen by several members of the hospital staff. There was no crepitus, no local tenderness, no cleft could be felt, no interference with movement (apart from what would be accounted for by the effusion alone), and no loss of the power of extending the leg. A radiogram, however, revealed the presence of a transverse fracture of the patella without separation of the fragments (Fig. 3). The patient was kept at rest in bed for a few days, when a light moveable plaster-of-Paris splint was applied, and he was sent to the convalescent home, where he had massage and exercises daily, getting about during the rest of the day with his splint on. Convalescence was uninterrupted and bony union the result. (Fig. 4, taken on Feb. 14th, 1910.)

This last case was demonstrated at a meeting of the Middlesex Hospital Medical Society on March 25th, 1909, and the importance of being on the look-out for such an obscure injury was emphasised. It was somewhat alarming a few weeks later, when a house surgeon informed me that he had filled the last surgical bed with a traumatic synovitis of the knee, because he suspected that it might turn out to be a case of a similar fracture to the one I have described. However, my fears that the wards would be filled with cases of suspected fracture were not justified, for the case turned out to be a transverse fracture of the patella without separation of the fragments. The history of the case is as follows:—

CASE 3.—The patient, a barmaid, aged 29 years, was turning round quickly in a stooping position when she felt a pain in the left knee like "something stretching." The pain increased, so she went to get some camphorated oil, her panacea for all ills, to obtain which she ascended

three flights of stairs. She then returned to her work at the bar, but as the knee got more painful she sent for a medical man, who referred her to the hospital. She was admitted to the Queen's Ward on April 14th, 1909, the day of the accident, under Sir Alfred Pearce Gould, who, knowing I was interested in these cases, kindly transferred the patient to my care, and I am indebted to him for permission to publish it. There was good power of extension of the leg; no line of fracture could be felt. There was no local tenderness, no crepitus, and but little effusion into the joint. A radiogram (Fig. 5) showed a transverse fracture of the patella, without separation of the fragments. After a few days' rest in bed a light removeable plaster-of-Paris splint was applied, and she was sent to the convalescent home, where massage and passive and active movements were carried out daily. Convalescence was uninterrupted and the result was excellent, bony union occurring, as the accompanying plate shows. (Fig. 6, taken on Sept. 5th, 1909.)

CASE 4.—The remaining case was that of a carman, aged 31 years. He was descending some stairs on Feb. 7th, 1910, to deliver a parcel, when he slipped and fell downstairs, failing to recover himself. He did not fall on his knee, but his leg was bent under him. He got up, went upstairs again, mounted his van, and drove back to the depôt. He got off his van without help. The knee later in the day became painful, so he drove round to the hospital and walked in. The case was diagnosed as one of synovitis of the knee, a back splint was applied, and the patient instructed to attend as an out-patient. The next day he remained indoors, but the following day, Feb. 9th, he called at the hospital again, when the casualty surgical officer, Mr. C. H. S. Webb, ordered a skiagram to be taken (Fig. 7), and it was found that there was a transverse fracture of the patella, without separation of the fragments. In this case, as in the others, there was no local tenderness, no crepitus, and no separation of the fragments to be felt. The power of extending the leg was quite strong also. The same treatment was adopted as in the other cases and the result was excellent, bony union being obtained. (Fig. 8, taken on July 18th, 1910.)

For the trouble he has taken in the skiagrams published with the above cases I am much indebted to Mr. R. F. Mann, photographer and assistant in the electrical department at the Willesden Hospital.

The problem of the satisfactory treatment of fractures of the lower limb in hospital is no easy one, for if they are to be treated by massage and exercises these cannot be carried out for a sufficient length of time in the wards owing to the great demands on the beds, so that some splint has to be applied while they are being treated as out-patients, with the result that stiffness in the neighbouring joints and adhesions at the site of fracture are but too common. At the Middlesex Hospital a serious attempt has been made to deal with this difficult problem, and we are fortunate in having at our convalescent home a most able and enthusiastic matron who takes the greatest interest in these cases, and supervises treatment by massage and exercises by nurses skilled in massage after the patients are fit to be discharged from the wards of the hospital.

All the cases of fracture of the patella which I have described were, after a few days' stay in bed, transferred from the hospital to the convalescent home, where massage and movements were carried out daily. In all the cases recovery was absolutely complete—in fact, a perfectly sound limb was the result, and the patients were fit to return to their occupations within three months of the date of the injury.

In every instance the union was bony. Unless great care be taken to make the exposure to the X rays in the exact line of fracture, it is quite possible for a plate to appear to show bony union when none is present. In all my cases the patella was most carefully examined through the fluorescent screen before the exposure of the plate, to make absolutely certain that no cleft between the fragments was still visible.

The cases are extremely interesting in many ways. First, they are of great pathological interest, for they bear out very clearly the statements of Macewen with regard to the mode of production of a transverse fracture of the patella by indirect violence. As Macewen (29) stated, "the fibrous and aponeurotic tissues lying in front of the patella are more elastic than the bone. By muscular action the bone snaps and retracts, and the fibrous and aponeurotic tissues over it still holding they bridge the interspace between the two fragments. If the contraction continues, the aponeurotic and fibrous tissues become overstretched and lose their resiliency. Finally, if the force be great enough the bridge gives way ....."

The clinical interest of these cases is enormous, and their importance cannot be exaggerated. The fact that the patients walked without much difficulty is remarkable in itself. Still, it must be remembered that patients can walk even when there is an obvious fracture of the patella, with marked separation of the fragments. Jessop (30) reported the case of a bargee who broke his patella clean across, tied a handkerchief round the knee, but never lay up or received any treatment at all. Dubrueil (31) also relates how a man fractured his patella and was able to walk forward to his home. Later he re-fractured it and again was able to walk. Martin (32) has also reported a similar case; while Carl Beck (33) mentions that in his experience patients, in spite of appreciable diastasis, were able to walk considerable distances without apparent discomfort. The fact that a patient walks in to see the surgeon should not therefore lead him to exclude the likelihood of a fracture of the patella having occurred.

From a study of these cases without separation it will be realised that the diagnosis may be extremely difficult, and that an absolutely certain diagnosis may be impossible without the aid of the X rays. This possibility has been rather neglected in most text-books, though recently attention has been called to it in some American and German works. Besides those writers who have already been referred to, these cases of fracture without separation of fragments have been mentioned specially by Reichel (34), König (35), Magruder (36), and Heineck (37), the last named stating that they often escape recognition. But even in the latest work by Cotton (38) it is stated that tear fractures always lead to separation of the fragments. This is shown to be a misstatement by Wegner's first case and by my three cases.

The difficulties of diagnosis being proved, the question arises whether neglect to recognise cases of this character is of great importance. Undoubtedly it is. If these cases are treated as simple contusions or sprains, and the patients are allowed to go about and return to their ordinary work when the swelling has subsided, separation of the fragments is likely to occur, and the fracture may be very easily converted from one which will get quite well with rest and care into one requiring operative treatment to ensure a satisfactory result. The case reported by Broca, and Malgaigne's cases which he refers to, all of which I have already described, are good examples of the dangers to which these patients are exposed. It is essential, then, in injuries of the knee or any other part to have a skiagram taken of all cases in which there is the slightest possibility of fracture. In fact, the X rays, by the revelations they have made, have proved the importance of having a plate taken in all injuries of the joints, and there can be little doubt that many cases diagnosed as sprains are really associated with fracture. The medico-legal importance of these cases can hardly be over-estimated, for if the patient obtain a skiagram elsewhere, which shows a fracture when the surgeon has assured him that there is none, the consequences are likely to be extremely unpleasant, if not disastrous, for the surgeon. While not in any way wishing to discourage the most careful manual examination of cases of injury, the fact must be recognised that manual examination, however carefully carried out, will fail to demonstrate some bone lesions which only the X rays will reveal. By the systematic use of the X rays obscure injuries will be revealed, and much needless suffering and inconvenience prevented.

The next aspect of these cases to which I will direct attention is the process of repair and the importance of obtaining bony union. The average length of treatment in my cases was about three months, when the patients returned to full work. Skiagrams were frequently taken to make sure that no separation of the fragments was taking place. The new bone does not throw a clear shadow for some months after it is laid down, and it is not possible to be sure that bony union has occurred until five or six months after the injury. I attach great importance to obtaining bony union in these cases, for even a short fibrous union is liable to stretch, an occurrence attended by some disability, not to say many dangers. Not the least of these dangers is the liability to re-fracture of the patella or rupture of the ligamentum patellæ. It is a pity, to my mind, that cases of fracture of the patella, including even those which have been submitted to operation, are not more carefully followed up and skiagraphed to see whether bony union has resulted; and Stimson (39) has stated that even in operation cases the union, which was so close that no independent mobility could be recognised, has sometimes been found to be fibrous, while in some bony union has taken place only in the posterior half or three-quarters.

It has been maintained that fibrous union was as good as, or even better than, bony. Hamilton (40), for instance, stated that a fibrous band, with only half or three-quarters of an inch separation, was as useful as bony, whilst many writers contended that because the bone, and not the fibrous

FIG. 1.

FIG. 2.

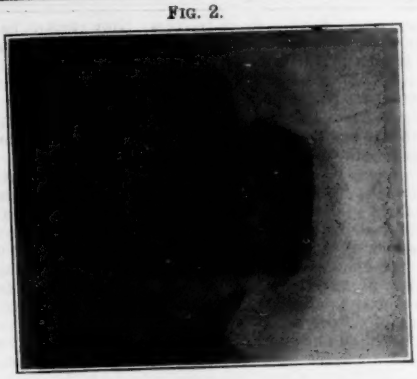

FIG. 3.

FIG. 4.

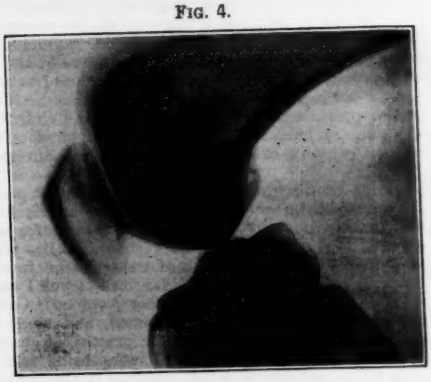

FIG. 5.

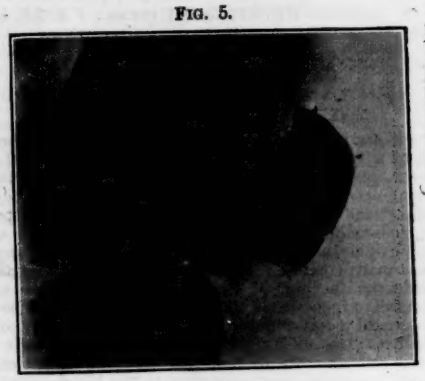

FIG. 6.

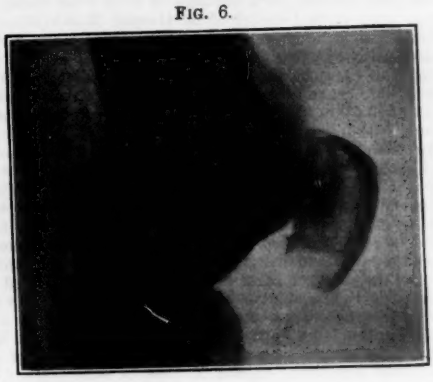

FIG. 7.

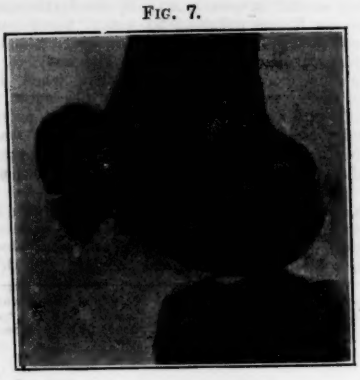

FIG. 8.

union, often breaks in re-fracture, bony union has no advantage over a close fibrous union. Such was maintained by Morris (41), Desprès (42, 43), Wagner (44), and Murray (45), amongst others, but these surgeons were probably not aware of the fact that re-fracture was more common after non-operative than after operative treatment, and that it was the fibrous union and consequent lengthening of the patella which predisposed to re-fracture.

That fibrous union of a fractured patella does seriously impair the stability of the knee-joint must now be undoubted. Re-fracture is much more frequent in the patella than in any other bone—Lauper (46), Thiem (47), Corner (48, 49); and more common after massage and other forms of non-operative treatment (when the union is generally fibrous) than after open operative treatment (when the union is probably bony)—Alessandri (50), Gibbon (51), Meyers (52), Powers (53), Bégouin and Audérodias (54). Not only does a fibrously united patella increase the liability to re-fracture, but the whole extensor arc is weakened, the joint being uncertain and unreliable, which leads to frequent falls if the patients return to their usual occupations and habits of life. There is evidence of this in the frequency with which other injuries occur; for example, rupture of the ligamentum patellæ. In 140 cases of rupture of the ligamentum patellæ Walker (55) found that previous fracture of the patella had been an etiological factor 17 times. Although bony union presents but slight advantages over a close fibrous union so far as immediate results show, when the future history of the limb is taken into account the advantages are much greater.

The period of treatment in my own cases might possibly have been cut down slightly, but, for the reasons I have stated, I was particularly anxious to make sure of a sound bony union. There has been great keenness on the part of surgeons to cut down the length of treatment of fractures of the patella after suture of the fragments, but I cannot help thinking that this has been rather overdone. Cases of re-fracture after wiring are too common, and since they generally occur during the first few months after operation it looks as if too great a risk were being taken in allowing these patients so much freedom of the limb, and some support such as a bandage or even some check apparatus, such as that described by Howard Marsh (56), would seem advisable to prevent extreme flexion for the first few weeks after getting about. No doubt, however, many wonderful cases have been reported; for instance, one recorded by Lucas-Championnière (57), where a clown was able to return to his occupation, involving the turning of somersaults, within two months after operation.

In bringing the subject of transverse fracture of the patella, without separation of the fragments, under notice, I thought it would give food for thought in many ways: pathologically the cases are interesting; the clinical picture is most striking and teaches us to hesitate very much before giving a definite diagnosis of a bone lesion without the help of the X rays; and historically, in accounting for probably most of the cases of bony union which were recovered from the post-mortem and dissecting rooms before the days when wiring was the usual treatment.

By far the most important point for the surgeon is the difficulty of diagnosis, and he must now realise that he is absolutely dependent on the X rays in such cases. With regard to the frequency with which these cases occur, it is difficult to speak with certainty, and until it is the rule to examine all injuries of joints with the X rays, we cannot say how many of these cases are being missed at the present time. The cases I have described occurred in the practice of the Middlesex Hospital in a period of 13 months, during which time we treated in all 20 cases of fracture of the patella. Failure in diagnosis may not only involve the surgeon in a suit for damages, but if the character of the injury be not realised by somebody else, an unusual strain may lead to great hardship for the patient, owing to separation of the fragments and the necessity of an operation which would otherwise have been unnecessary.

References.—1. Gulliver: Edinburgh Medical and Surgical Journal, 1837, vol. xlvii., p. 160. 2. Macewen: THE LANCET, 1883, vol. ii., p. 847. 3. Malgaigne: Journal de Chirurgie, 1843, vol. i., p. 244. 4. Malgaigne: Traité des Fractures et des Luxations, 1855, plate xiv., Figs. 2 and 3. 5. Broca: Journal de Médecine et de Chirurgie Pratiques, 1875, p. 58. 6. Broca: Centralblatt für Chirurgie, 1875, p. 223. 7. Macewen: Annals of Surgery, 1887, vol. i., p. 177. 8. Vallas: Revue de Chirurgie, 1899, vol. ii., p. 419. 9. Vallas: Lyon Médical, 1905, vol. i., p. 1001. 10. Wegner: Deutsche Zeitschrift für Chirurgie, 1900, vol. lvii., p. 157. 11. Barker: Clinical Society's Transactions, 1900, vol. xxxiii., p. 225. 12. Barker: Brit. Med. Jour., 1900, vol. i., p. 745. 13. Cauthier: Lyon Médical, 1905, vol. ii., p. 627. 14. Thiem: Verhandlungen der Deutschen Gesellschaft für Chirurgie, 1905, vol. xxxiv., p. 392. 15. Mayer: Ibid., p. 189. 16. Doberauer: Ibid., p. 195. 17. Smith: American Journal of the Medical Sciences, 1873, vol. lxv., p. 429. 18. Humblet: Archives Médicales Belges, 1883, vol. xxxiv., p. 236. 19. Trésoret: Gazette des Hôpitaux, August 11th, 1881. 20. Trésoret: Medical Times and Gazette, August 27th, 1881. 21. Blackham: Journal of the Royal Army Medical Corps, Dec. 9th, 1907, p. 610. 22. Bennett: Dublin Journal of Medical Science, 1881, vol. ii., p. 450. 23. Scudder: The Treatment of Fractures, 1907. 24. Rödiger: Extracapsuläre Brüche der Patella, Trier, 1887. 25. Reichel: Von Bergmann's System of Practical Surgery. 26. Magruder: Journal of American Medical Association, June 4th, 1910. 27. Johnson: Archives of the Middlesex Hospital, July, 1910. 28. Johnson: The Medical Review, November, 1910. 29. Macewen: THE LANCET, 1883, vol. ii., p. 847. 30. Jessop: Medical Times and Gazette, 1871, vol. ii., p. 280. 31. Dubrueil: La Semaine Médicale, 1892, p. 297. 32. Martin: Gazette des Hôpitaux, 1895, vol. lxviii., p. 1345. 33. Beck: Fractures, 1900. 34. Reichel: Von Bergmann's System of Practical Surgery, p. 573. 35. König: Lehrbuch der Speciellen Chirurgie für Aerzte und Studirende, 1905, vol. iii., p. 626. 36. Magruder: Journal of American Medical Association, June 4th, 1910. 37. Heineck: Surgery, Gynæcology, and Obstetrics, 1909, vol. ii., p. 177. 38. Cotton: Dislocations and Joint Fractures, 1910. 39. Stimson: A Treatise on Fractures and Dislocations, 1905. 40. Hamilton: Fracture of the Patella, 1880. 41. Morris: THE LANCET, 1883, vol. ii., p. 865. 42. Desprès: Progrès Médical, Sept. 21st, 1878. 43. Desprès: London Medical Record and Recorder, 1878, p. 476. 44. Wagner: Deutsche Medizinische Zeitung, 1888, No. 11. 45. Murray: Brit. Med. Jour., 1838, vol. i., p. 817. 46. Lauper: Correspondenz-Blatt für Schweizer Aerzte, 1904, vol. xxxiv., p. 321. 47. Thiem: Verhandlungen der Deutschen Gesellschaft für Chirurgie, 1905, vol. xxxiv., p. 374. 48. Corner: Annals of Surgery, 1900, vol. ii., p. 749. 49. Corner: The Practitioner, 1908, vol. ii., p. 498. 50. Alessandri: Centralblatt für Chirurgie, 1902, vol. xxix., p. 473. 51. Gibbon: Annals of Surgery, 1904, vol. xxxix., p. 1021. 52. Meyers: Ibid., 1901, vol. xxxiii., p. 194. 53. Powers: Ibid., 1898, vol. ii., p. 67. 54. Bégouin et Audérodias: Gazette Médicale de Paris, 1897, p. 505. 55. Walker: American Journal of the Medical Sciences, 1896, p. 638. 56. Howard Marsh: Brit. Med. Jour., 1898, vol. i., p. 613. 57. Lucas-Championnière: Archives Internationales de Chirurgie, vol. i., Fas. i.

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A CASE OF

CONGENITAL PULMONARY STENOSIS, WITH SPECIAL CONSIDERATION OF THE NATURE OF THE SECONDARY BLOOD CHANGES.[1]

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IN a previous paper one of us (F. P. W.)[2] described the case of a young man, aged 22 years, with congenital heart disease, great cyanosis, and extreme secondary polycythæmia (polyglobuly)—namely, over 10,000,000 red cells to the cubic millimetre of blood. Evidence was furnished in support of the modern doctrine that the excess in the number of red blood corpuscles in such cases was largely of a compensatory (conservative) nature; that it was a manifestation of the attempt on the part of the bone-marrow to make up for imperfect oxygenation of the blood and tissues of the body by a numerical increase of the red cells—that is to say, of the oxygen carriers of the blood; that it represented, in fact, a vital compensatory reaction analogous to the increase of the polymorphonuclear leucocytes in the blood, consequent on streptococcal invasions, &c. It was furthermore pointed out that the figures obtained by actual blood-counts might make one under-estimate rather than over-estimate the total numerical excess of erythrocytes in the body, for there was considerable evidence indicating that when, in chronic cardiac cases, the erythrocyte-count per cubic millimetre of blood was above the normal (relative polycythæmia) the total volume of blood in the whole body was likewise excessive, a supposition confirmed by the congested appearance of the ears, lips, nose, tongue, and retinæ in many cases.

In the present case we have been able to obtain additional evidence (pointing to the same conclusions) by means of the estimation of the total hæmoglobin and total blood volume in the body by Haldane and Lorrain Smith's carbon

[1] A paper read before the Clinical Section of the Royal Society of Medicine on Jan. 13th, 1911.

[2] F. P. Weber: Edinburgh Medical Journal, 1909, New Series, vol. ii., p. 18.

monoxide method. As concentration of the blood resulting from delayed circulation (stasis) in the capillaries might partly account for the polycythæmia in chronic cardiac cases, we have in the present case attempted to measure (as was proposed in the paper already referred to) the degree of any such blood concentration (if present) by estimating the total solid residue in the patient's blood serum, just as Weintraud and Senator estimated it in cases of so-called "splenomegalic polycythæmia" or "erythræmia."[3]

It has been suggested by Bence, von Koranyi, Mohr, Lommel,[4] and others, and quite recently again by E. C. Seufert,[5] that the excess of red blood corpuscles in cases of splenomegalic polycythæmia (erythræmia) may be accounted for as a compensatory vital reaction on the supposition that the hæmoglobin is defective in quality in such a way as to lower its capacity for taking up oxygen. Similarly it might be suggested that a lowered oxygen capacity of the hæmoglobin is the real cause of polycythæmia, when this is met with in cases of congenital (and acquired) heart disease. There is, however, no evidence that the oxygen capacity of the hæmoglobin is abnormally low or abnormally high in either group of cases, unless Mohr's observation be correct that it was actually diminished in a case of congenital pulmonary stenosis with secondary polycythæmia, which was specially examined in this respect. In cases of polycythæmia with splenomegaly the oxygen capacity of the hæmoglobin has never been found notably reduced. Thus, in two cases of Lommel and one of Mohr it was found to be at the lowest level within normal limits; nor did cases referred to by Senator (1906) and Parkes Weber (two cases in which A. E. Boycott examined the oxygen capacity of the blood) furnish any support to Bence's suggestion.[6] Of great importance are the observations of P. Morawitz and W. Röhmer[7] on the subject. They apparently find that the oxygen capacity of the hæmoglobin does not differ in health or disease from the ordinary standard, even if in some conditions (affecting the salts in the blood) the oxygen is much more readily dissociated from the hæmoglobin than in others. Moreover, we may add that in the rare cases of chronic methæmoglobinæmia and chronic sulph-hæmoglobinæmia (in which less oxygen than normally can be taken up by the red corpuscles) secondary polycythæmia has not been noted.

The patient in the present case is an intelligent young man of Jewish parentage, aged 29 years, a French polisher by trade, who first came under observation on account of temporary bronchitic symptoms. In spite of his congenital heart disease (see later) and the lividity, polycythæmia, &c., connected with it, he has usually enjoyed good health. He has great cyanosis of the lips, tongue, ears, nose, fingers, and toes; the cyanosis varies in degree from time to time and is increased by muscular exercise; it does not seem to be markedly lessened by oxygen inhalation. There is a tendency to epistaxis and there is decided "clubbing" of the fingers and toes. A skiagram of the hands shows the absence of any osteo-arthropathy; the phalangeal bones appear normal. By percussion and Roentgen ray examination the heart is found to be slightly enlarged to the right, the cardiac dulness reaching one finger-breadth to the right of the sternum. There is a rather loud systolic murmur, best heard over the second and third left intercostal spaces, close to the left border of the sternum, doubtless due to pulmonary stenosis. From what has been found in similar cases, it is highly probable that in addition to the pulmonary stenosis there is a considerable defect in the interventricular septum, but of this we have no certain physical signs. Beyond these points there is nothing special to be noted in regard to the examination of the thorax and abdomen. The liver and spleen cannot be felt and are apparently not enlarged. Brachial systolic blood pressure, about 100 mm. Hg. Examination of the urine shows nothing abnormal except that there is intermittent albuminuria of the orthostatic type. The urine passed immediately on getting out of bed in the morning is free from albumin, whereas that passed later yields a more or less thick cloud of albumin; but when microscopically examined it was free from tube-casts. There is no sexual or other form of infantilism. As in cases of "splenomegalic polycythæmia" ("erythræmia") the conjunctivæ tend to be suffused owing to vascular engorgement, and by ophthalmoscopic examination the retinal veins are seen to be distended. In January, 1910, a retinal hæmorrhage at the lower part of the left optic disc was noted.

Blood examination.—Red cells (capillary blood). 10,110 000 per cubic millimetre of blood; white cells, 10,275 per cubic millimetre; hæmoglobin, 200 per cent. by Sahli's method, 180 per cent. (on a later occasion) by Haldane's method. The blood is so "thick" that it is relatively difficult to suck it up into a capillary tube; when the fresh blood has been centrifugalised in a cylindrical tube about nine-tenths instead of the normal one-half of the column are taken up by the corpuscular layer. A differential count of 500 white corpuscles (made in September, 1910) gave polymorphonuclear leucocytes 73 per cent., small lymphocytes 19·8 per cent., large lymphocytes 5·2 per cent., transitionals 1·0 per cent., eosinophiles 0·6 per cent., mast-cells 0·4 per cent.; the red corpuscles in the blood-film showed nothing abnormal excepting that three nucleated red corpuscles (normoblasts) were seen during the count of 500 white cells.

The viscosity of the blood as estimated (at 20° C.) by Determann's clinical viscosimeter,[8] was found to be 35·9 times that of water (at 20° C.), that is to say, very greatly in excess of the normal. The coagulability of the blood was less than that of normal blood; the coagulation time, as measured by Sir A. E. Wright's coagulometer, being 15 minutes.[9] The resistance of the blood towards hæmolysis, as tested by the addition of the washed red corpuscles to graduated hypotonic salt solutions, appeared to be rather below the normal standard; very slight hæmolysis was observed when the washed red cells were added to a 0·72 per cent. aqueous solution of sodium chloride, and was complete with a solution of 0·54 per cent.

Specific gravity of the blood (pyknometer method), 1·086; specific gravity of the blood serum (pyknometer method), 1·036; dry residue of the blood, 29·4 per cent.; dry residue of the blood serum (only half a gramme of serum was obtained, which, owing to slight hæmolysis, was coloured red with hæmoglobin), 10·38 per cent.

On Sept. 10th, 1910, Dr. J. S. Haldane and Dr. C. Gordon Douglas kindly estimated the patient's total oxygen capacity (or rather the oxygen capacity of the total hæmoglobin of his blood) and his total blood volume by Haldane and Lorrain Smith's carbon monoxide method.[10] For their investigation and the following report (by Dr. Douglas) we take this opportunity of thanking them. Precautions were taken to guard against a possible source of fallacy (in the method in question) which may arise if insufficient time is allowed for the even distribution of the carbon monoxide through the blood before taking the samples of blood for analysis. The carbon monoxide was given at a slow rate (30½ minutes were occupied by this) by means of the original apparatus employed by Haldane and Lorrain Smith, and the patient was required to breathe for another four minutes into this apparatus. Then he breathed for 17 minutes into a closed respiration apparatus with an effective volume of 15 litres containing pure air, the oxygen in this being kept constant automatically

[3] Vide F. P. Weber: Polycythæmia, Erythrocytosis, and Erythræmia, Quarterly Journal of Medicine, Oxford, 1908, vol. ii., pp. 85–134. By analogy with the terms "leucocytosis" and "leukæmia" the term "erythrocytosis" is sometimes employed to signify a secondary ("reactive") increase of the red blood corpuscles so as to distinguish it from a condition ("erythræmia") in which the increase of the red cells is apparently due to a primary disorder of the erythrocyte-producing tissue of the body.

[4] These authors are quoted by F. P. Weber, Quarterly Journal of Medicine, loc. cit., p. 113.

[5] E. C. Seufert: American Journal of the Medical Sciences, Philadelphia, 1910, vol. cxl., p. 827. Seufert assumes, as causa causans of erythræmia, some deterioration in the quality of the hæmoglobin.

[6] Cases quoted by F. P. Weber, Quarterly Journal of Medicine, loc. cit., p. 114.

[7] P. Morawitz and W. Röhmer: Ueber die Sauerstoffversorgung bei Anämien, Deutsches Archiv für Klinische Medicin, 1908, vol. xciv., pp. 529, et seq.

[8] Determann: Verhandlungen des Kongresses für Innere Medicin, Wiesbaden, 1907, vol. xxiv., p. 533. E. Münzer and F. Bloch, in their work, Experimentelle Beiträge zur Kritik der Viskositätsbestimmungsmethoden (Zeitschrift für Experimentelle Pathologie und Therapie, Berlin, 1910, vol. vii., pp. 174–184), find that Determann's clinical viscosimeter gives too high values. Anyhow, in our present case, the viscosity is, beyond all doubt, excessive.

[9] In cases of erythræmia (splenomegalic polycythæmia) and polycythæmia secondary to cardio-pulmonary affections Parkes Weber has observed that the coagulation of the blood seems to be delayed, as if diminution of coagulability were compensatory (in the modern teleological sense) to great increase of blood-viscosity in these cases (the increased tendency to thrombosis, connected with the excessive blood-viscosity and delayed capillary circulation being to some extent neutralised by the diminution of blood-coagulability).

[10] Haldane and Lorrain Smith: Journal of Physiology, 1900, vol. xxv., p. 331.

by means of an arrangement similar to that devised by Regnault and Reiset. The amount of carbon monoxide lost by the patient into this closed space was sufficiently small to be neglected. During the experiment 239 c.c. of carbon monoxide (measured at 0° C. and 760 mm. Hg pressure) were administered to the patient. Two samples of blood were taken from the finger, one 11½ minutes before the end of the experiment and the other at the end of the experiment. The degree to which the blood was saturated with carbon monoxide—namely, 11·9 per cent.—was the same in the two samples, and there can therefore be little doubt that the time allowed was long enough for the gas to become evenly distributed through the blood. The total carbon monoxide (or oxygen) capacity of the subject (or rather of the hæmoglobin in his blood) was therefore 239/11·9 × 100 = 2010 c.c. Since the percentage of hæmoglobin by Haldane's hæmoglobinometer was 180, corresponding to an oxygen (or carbon monoxide) capacity of 33·3 per cent., the volume of the patient's blood was 2010/33·3 × 100 = 6040 c.c. The patient's weight without clothes was 7 st. 4 lb., or 46 kilos, and he had therefore 4·37 c.c. of oxygen capacity (in his hæmoglobin) and 13·13 c.c. of blood per 100 grammes of body weight. Haldane and Lorrain Smith's original results for a series of 14 normal men were 0·98 c.c. of oxygen capacity and 4·78 c.c. of blood per 100 grammes of body weight; Plesch[11] gives 1·12 c.c. of oxygen capacity and 4·78 c.c. of blood, and Oerum[12] gives 5·2 c.c. of blood. It is doubtful (Dr. Douglas writes us) whether the fallacy alluded to above was excluded in all these cases, since more recent observations[13] have shown in three perfectly normal persons an oxygen capacity of about 1·4 c.c. and a blood volume of about 7·5 c.c. per 100 grammes of body weight. In the present case, however, there can be no doubt that both the oxygen capacity and the blood volume per 100 grammes of body weight are very much greater (especially, of course, the former) than those in normal persons, though, on account of the difficulty just mentioned, the values cannot at present be definitely expressed as multiples of normal values.

In regard to these remarks of Dr. Douglas, it may be noted that according to the old idea that the total blood in the whole human body averages about one-thirteenth of the body weight (or 7·7 grammes blood per 100 grammes body weight), the normal weight of the blood in a person of the present patient's body weight (46 kilogrammes) should be about 3538½ grammes.

The present case may be regarded as an extreme example of cyanosis and polycythæmia[14] in an adult secondary to congenital heart disease. It shows that in these cases, as in "splenomegalic polycythæmia" ("erythræmia"), not only the number of red corpuscles and the amount of hæmoglobin per cubic millimetre of blood are greatly above the normal, but so also are the amount of hæmoglobin (as measured by the oxygen capacity) and the volume of blood per 100 grammes of body weight; there is, in fact, a condition of true plethora ("polyhæmia") present, so that the degree of absolute polycythæmia is much greater even than the degree of relative polycythæmia.

The polycythæmia in these cases can therefore only to a very limited extent, if at all, be accounted for by inspissation of the blood owing to blood stasis in the capillaries. But it must, as in "splenomegalic polycythæmia" ("erythræmia"), be almost entirely due to an increased formation of red blood cells in the bone marrow. In the present case the great hæmopoietic activity of the bone marrow is confirmed by the rather large percentage (though it is within normal limits) of the polymorphonuclear leucocytes (73 per cent. of the white cells) and by the presence of a few nucleated red cells in the circulating blood.

That polycythæmia in chronic cardiac cases is not merely "relative polycythæmia"—that, in fact, it is not merely due to concentration of the blood owing to delayed circulation (blood stasis) in the capillaries—has been to some extent shown by the numerical increase of the red cells being found not only in the blood from capillaries and veins, but likewise in that from the arteries. Thus, G. A. Gibson[15] on one occasion, in a boy, aged 16 years, supposed to be suffering from mediastinal pericarditis, found the erythrocytes in the arterial blood to be 7,000,000; in the capillary blood, 8,500,000; and in the blood from a vein, 10,000,000. Palleri and Mergari,[16] in a case of congenital pulmonary stenosis, counted the red cells in capillary blood from the finger at 6,650,000; in venous blood from a vein in the arm at 6,400,000; and in arterial blood from the temporal artery at 5,950,000.

The dry residue of the blood (29·4 per cent.) and of the blood serum (10·38 per cent.) in our present case may be compared with the following data given by W. Bie and W. Maar[17] in their account of a case (a man aged 19 years) of cyanosis and polycythæmia (6,500,000 to over 10,000,000 red cells in the cubic millimetre of blood) secondary to congenital heart disease:—

Dry residue of blood (from a vein)	25·41 to 25·45 per cent.
Dry residue of blood serum	8·87 to 8·88 ,,

As approximate values for normal persons the following figures may be given[18]:—

Dry residue of blood	20·3 to 22·8 per cent.
Dry residue of blood serum... ...	9·21 to 10·50 ,,
Albumin in blood	22·6 per cent. (von Jaksch).
Albumin in blood serum	8·3 ,, ,,
Specific gravity of blood	about 1·060
Specific gravity of blood serum...	1·028 to 1·031.

The excess of red corpuscles accounts, of course, for the rather large percentage of dry residue and the rather high specific gravity in polycythæmic blood as a whole, but it is with the corresponding figures for the blood serum that we are specially concerned. The fact that these latter are not much, or not at all, above normal limits shows that the blood plasma in polycythæmia secondary to congenital heart disease (as also in "splenomegalic polycythæmia" or "erythræmia") is not greatly if at all concentrated. In other words, it proves that the polycythæmia cannot be accounted for by concentration of the blood as a whole. In our own case, indeed, the figures show that the blood plasma may have been very slightly concentrated,[19] probably as a result of capillary blood stasis. (It may be noted in this connexion that "clubbing" of the fingers and toes was not present in Bie and Maar's case, but was in our case.)

The albumin in the blood and blood serum has not, as far as we know, been estimated in cases of polycythæmia secondary to cardiac disease, but in cases of erythræmia Weintraud and Senator both found the percentage of albumin in the blood serum below the normal, and in an unpublished case of erythræmia G. Dorner estimated it at 7·38 to 7·55 per cent. (that is, below the normal, according to von Jaksch).

Anyhow, we have now decided evidence that the chronic polycythæmia of congenital heart disease is, like that of "erythræmia," associated with excess in the total blood-volume of the body ("plethora vera," "polyhæmia") and with excessive formation of red blood corpuscles in the bone marrow. This is doubtless also true of the polycythæmia sometimes associated with acquired heart disease. Thus Lorrain Smith and H. L. M'Kisack,[20] in the case of a boy, aged 12 years, suffering from adherent pericardium and chronic cyanosis, not only showed that the proportion of red cells to blood plasma was excessive (relative polycythæmia), but also demonstrated by the carbon-monoxide method that

[11] Plesch: Zeitschrift für Experimentelle Pathologie und Therapie, 1909, vol. vi., p. 380.

[12] Oerum: Deutsches Archiv für Klinische Medicin, 1908, vol. xciii., p. 356.

[13] See Boycott and Douglas, Guy's Hospital Reports, 1908, vol. lxii., p. 157; and C. G. Douglas, Journal of Physiology, 1910, vol. xl., p. 471.

[14] F. Parkes Weber in the Edinburgh Medical Journal (1909, New Series, vol. ii., p. 18) gave references to 14 cases of congenital pulmonary stenosis, or more complicated forms of congenital heart disease, in which blood counts showed that there were over 8,000,000 red cells in the cubic millimetre of blood. In the case he himself described, a man aged 22 years, the red cells were 10,300,000 in the cubic millimetre. In cases of congenital heart disease published since then counts of over 9,000,000 red cells have been recorded by C. A. Fife (Proceedings Philadelphia Pediatric Society, Dec. 14th, 1909; British Journal of Children's Diseases, London, 1910, vol. vii., p. 24), by T. R. Whipham (Proceedings Royal Society of Medicine, 1910, vol. iii., Section for the Study of Disease in Children, p. 149, and Ibid., 1911, vol. iv., p. 3), and by W. Bie and W. Maar (Deutsches Archiv für Klinische Medicin, 1910, vol. xcix., p. 382.)

[15] G. A. Gibson: THE LANCET, Jan. 5th, 1895, p. 24.

[16] Palleri and Mergari, quoted by Guiserne, Des Polyglobulies, Thèse de Paris, 1902.

[17] W. Bie and W. Maar: Deutsches Archiv für Klinische Medicin, Leipzig, 1910, vol. xcix., p. 382.

[18] Compare also the figures quoted in H. Vierordt's Anatomische, Physiologische und Physikalische Daten und Tabellen, third edition, Jena, 1906, pp. 191–203.

[19] The blood serum used in our case, as already mentioned, contained a little hæmoglobin.

[20] Lorrain Smith and M'Kisack: Transactions of the Pathological Society of London, 1902, vol. liii., p. 136.

the total volume of blood was far beyond the normal standard, so that there was undoubtedly a condition of true plethora present. It is almost certain that in all chronic cardiac cases, whenever the erythrocyte count per cubic millimetre of blood is above the normal (relative polycythæmia), the total volume of blood in the whole body is likewise excessive. This is indeed what one would expect from the congested appearance in some patients of the face, lips, tongue, and retinæ (as seen by ophthalmoscopic examination) during life, and the hyperæmic condition of their viscera as seen at post-mortem examinations. It is also probable that the total blood volume may be excessive in many chronic cardiac cases even when a blood count shows absence of relative polycythæmia.

E. Weil[21] of Paris was the first to show that the secondary polycythæmia of heart disease is associated with an actual erythroblastic reaction in the bone marrow. In 1901, in post-mortem examinations on two children with congenital stenosis of the pulmonary orifice of the heart and chronic cyanosis, he found that there was red transformation of the bone marrow, microscopic sections of which showed that all traces of the normal fatty tissue had disappeared. His results have been confirmed by Mackey and others. In 1907 L. G. J. Mackey[22] examined microscopic sections made by J. Miller from the bone marrow of a case similar to those of Weil, and obtained similar results to Weil. The polycythæmia of congenital heart disease and chronic cardiac insufficiency is therefore due to great erythroblastic activity of the bone marrow, and represents a true hyperplasia of the erythrocytes and of the erythrocyte-forming tissues of the body, which is, in fact, analogous to the myocardial hypertrophy found in conditions throwing abnormal work on the whole or a portion of the musculature of the heart.

Orthostatic albuminuria seems not to have been observed in most cases of congenital heart disease, but it was very marked in the present patient[23] and in a young man, aged 22 years, whose case was previously described by one of us.[24] We should expect to find it in other cases of congenital heart disease, if accompanied by chronic cyanosis and extreme polycythæmia, and in this connexion, as suggested to us by Dr. A. E. Garrod, the calcium content of the blood might be estimated in similar future cases.

It is worth while drawing attention to the fact that the patient whose case we are now considering takes a good deal of open-air exercise, and, though it may tend temporarily to increase his cyanosis, he declares that he feels much better with exercise than without it. He thinks that an active industrious life suits him better than a lazy one.

The secondary polycythæmia in cases of congenital heart disease is seldom, if ever, rivalled in degree by the secondary polycythæmia which sometimes, as is well known, occurs in chronic acquired valvular affections (of the mitral valve) and in adherent pericardium. It is more nearly rivalled by the marked secondary polycythæmia occasionally associated with late stages of pulmonary emphysema, chronic bronchitis, asthma, old bilateral pleuritic adhesion, chronic interstitial pneumonia, and pulmonary fibrosis. The polycythæmia in all such cases differs from the polycythæmia (possibly of primary myelogenous origin) associated with chronic splenomegaly, which has been termed "erythræmia,"[25] by the not infrequent absence of real cyanosis in erythræmia, especially in its early stages.

What prognostic significance can be attached to the secondary polycythæmia in cardiac cases? In answer to this question we need only repeat what one of us has previously written. Just as hypertrophy of the walls of the heart is useful in so far as it compensates for mechanical defects in the valvular apparatus, so also is polycythæmia useful in so far as it compensates for difficulties in the proper oxygenation of the blood and tissues of the body; but just as in cardiac valvular disease great hypertrophy of the heart indicates some grave defect in the valvular mechanism, so also an extreme increase in the number of erythrocytes in the blood points to there being great impairment of the normal process of oxygenation of the body.

[21] E. Weil: Comptes Rendus de la Société de Biologie, Paris, 1901, vol. liii., p. 713.
[22] L. G. J. Mackey: Birmingham Medical Review, 1907, vol. x., pp. 113, 177.
[23] The orthostatic albuminuria was apparently not a family peculiarity.
[24] F. P. Weber: A Case of Congenital Heart Disease, with Extreme Secondary Polycythæmia and Orthostatic Albuminuria, Edinburgh Medical Journal, 1909, New Series, vol. ii., p. 18
[25] Vide F. P. Weber, Quarterly Journal of Medicine, loc. cit.

THE INTRAVENOUS METHOD OF TREATMENT OF SYPHILIS WITH SALVARSAN ("606"), WITH A CONVENIENT APPARATUS FOR SUCH ADMINISTRATION.

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Professor Ehrlich now advises that "606," which is on the market under the trade name of "salvarsan," should be administered by the intravenous method and that two doses should be given at an interval of three weeks. For this purpose a syringe has been devised, and as the volume is considerable (250–300 c.c.) the nozzle is provided with two-way taps, so that after one syringeful has been injected the syringe can be refilled without withdrawing the needle from the vein. Anyone, however, with experience of venipuncture will realise that it is difficult to manipulate the taps and the plunger without some slight movement of the needle which may lacerate the vein.

FIG. 2.

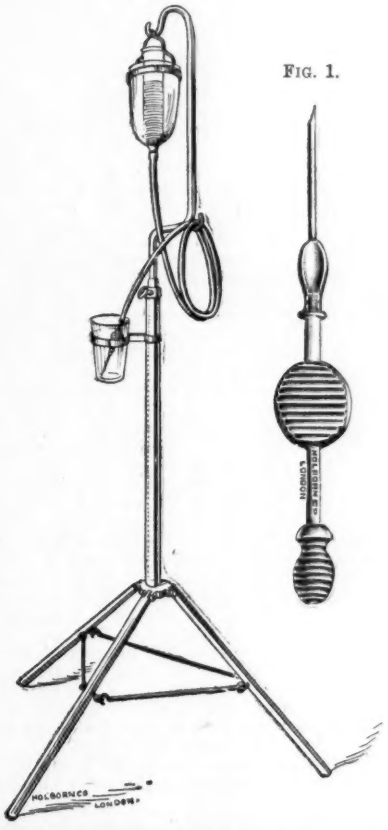

FIG. 1.

In December last, by the kindness and courtesy of Major G. W. Gibbard, R.A.M.C., and Captain L. W. Harrison, R.A.M.C., of the Military Hospital, Rochester-row, I was accorded the privilege of watching the technique there employed for the intravenous administration of "606."[1] I understand that as a matter of routine all suitable cases of syphilis are now treated by "606" given by the venous

[1] West London Medical Journal, January, 1911, p. 46.

route at this hospital. The technique that follows is that used by the officers mentioned, with the exception that I use my own needle-holder, described in THE LANCET of May 1st, 1909, p. 1248, which ensures complete control of the point of the needle (Fig. 1). I have used this holder, which was made for me by Mr. J. H. Montague of 69, New Bond-street, London, W., for over 1500 venipunctures, and find that it greatly facilitates this little operation, especially in cases where the vein is not large or prominent. I have also added a water-jacket to surround the small irrigator containing the "606" solution, as I found that the small volume of solution cooled too rapidly. The Holborn Surgical Instrument Company have also made me a convenient adjustable stand from which to hang the irrigator (Fig. 2). The apparatus consists of a container surrounded by a hot-water jacket, a rubber tube about 4 feet long which connects the container and the needle-holder, and a stout needle 1½ inches long and of the calibre of a fine exploring needle. About 3 inches from the needle-holder a piece of glass tubing is let in to act as a window. The container, tube, and needle-holder are connected up and sterilised before use. The rate of flow is regulated by altering the height of the container, and a clip is applied to the rubber tube about a foot from the needle-holder.

The patient should be in bed, with the arm selected for the infusion supported on a pillow. Having sterilised in the autoclave a glass measure graduated to 300 c.c., and also a glass stirring rod, 30 c.c. of sterilised distilled water is poured into the measure. The end of the phial containing the salvarsan is now broken off, and the contents are *slowly* shaken into the distilled water, which is briskly stirred. A clear yellow acid solution results. This is made up to a volume of 100 c.c. with sterilised normal saline solution (0·9 per cent.). Sterilised normal sodium solution is now added slowly in the proportion of 0·7 c.c. to each 0·1 gramme of salvarsan——viz., 4·2 c.c. of normal sodium hydrate to the solution containing 0·6 gramme of salvarsan. The sodium hydrate should be added till the yellow precipitate which is first produced is just re-dissolved. A slight excess of alkali, however, is of no matter. More normal saline solution is now added to bring the volume up to 300 c.c. All the solutions employed should be at a temperature of about 100° F., and the glass measure is placed in a basin containing water at a temperature of 110°. The water jacket surrounding the irrigator is also filled with water at a temperature of 110°. The irrigator is now filled with warm saline solution which is run through till all air bubbles have been got rid of. The clip is now applied and the needle-holder put into the sterilised tumbler containing some warm sterile saline solution. The skin over the most prominent vein at the bend of the elbow is sterilised by dabbing it with a saturated solution of iodine in chloroform and a bandage applied firmly round the upper arm in order to distend the vein. The needle having been boiled is now adjusted to the holder and a little saline solution run through. The irrigator is now lowered and the needle plunged into the vein and the clip removed. If the needle is in the vein the blood will run into the tube and be seen at the "window." The bandage is now removed and the irrigator raised and the required quantity of the solution of salvarsan is poured in. The solution should only be allowed to run in *slowly* so as to be well diluted by the blood-stream, and it should take about ten minutes to run in all the solution. 0·6 gramme of salvarsan having been diluted up to 300 c.c., 50 c.c. of the diluted fluid contains 0·1 gramme of salvarsan. 0·5 gramme is the usual dose for a healthy male adult and 0·4 gramme for a woman. About 100 c.c. of normal saline solution should be poured into the irrigator when the salvarsan solution has almost run out, so that the needle may be washed free of salvarsan before being withdrawn. Otherwise some salvarsan may escape along the needle track and produce some local inflammation and possibly phlebitis and thrombosis.

The preparation of the patient is of great importance, as if the infusion is given with a full stomach and high blood pressure an alarming condition of feeble rapid pulse and collapse may supervene, which, however, usually passes off when vomiting occurs. Rigors are not uncommon, and may occur from one to two hours after the infusion. The patient sometimes complains of a throbbing in the head and a metallic taste in the mouth and a sense of fulness in the throat. I prepare the patient by giving a pill the night before and a brisk saline purge in the morning of the infusion. I permit only a light breakfast with but little fluid, and allow no food or drink for four hours before the infusion. Since I have adopted these precautions I have recorded no alarming symptoms. The temperature generally becomes raised a few hours after the infusion, and although the rise is usually only a slight one of about a degree, occasionally it reaches 103° or even higher. The temperature usually returns to normal in 24 hours; in one or two cases it has lasted for several days.

There seems to be little doubt that the arsenic is almost entirely eliminated in a week, and therefore there can be little danger in giving a second dose even as early as a fortnight after the first. The patient should be kept in bed for at least three days or for 24 hours after the temperature becomes normal.

The practitioner must be on the look out for phlebitis and thrombosis, although this is a very rare sequela, and if it occurs the arm must be kept absolutely at rest. The Wassermann reaction should be determined before the first infusion and a month after the second infusion.

Upper Berkeley-street, W.

"NODULAR" FIBROMYOSITIS, AN EVERY-DAY AFFECTION,

AND ITS IDENTITY WITH SO-CALLED CHRONIC MUSCULAR RHEUMATISM.[1]

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IN bringing under notice the affection to which I have given the provisional title of "nodular fibromyositis," I cannot lay claim to any particular originality, for this condition has been recognised and the principles of its efficient treatment laid down for upwards of a hundred years, and descriptions have from time to time appeared in the literature. Dr. Balfour in 1816 wrote a very complete one, and at infrequent intervals other authors made contributions to the subject; one of major importance was by Uno Helleday, a Swede, in 1876. Since then it has been systematically studied on the clinical side, its pathology investigated, and its treatment established beyond doubt by a large number of observers. The Scandinavian school has led the way. In Sweden for the last 35 years the condition has occupied the important and prominent place in medical practice which it deserves, and to this fact the incomparably superior training and efficiency of the Scandinavian school of massage undoubtedly owe their origin. The German school has also furnished many investigators in this subject. The English literature, and I believe also the French, is almost barren of any adequate description. In 1904 Dr. R. Stockman of Glasgow wrote an excellent paper in the *Edinburgh Medical Journal:* to his monograph I am under great obligation. So much for a brief historical survey of what I consider to be the most neglected subject in the English literature of to-day.

Although I am specially concerned to describe a nodular or infiltrated condition of the fibro-muscular tissues and the symptoms to which this may give rise, laying special stress on the more marked and severe cases and on the more unusual examples which not infrequently lead to diagnostic errors, yet over and above this I have a very important thesis to maintain. It is this: That chronic muscular rheumatism, or to quote some of its synonyms—rheumatism, muscular and tendinous rheumatism, myalgia, muscular fibrositis, &c.—is a pathological condition, *the essential morbid process of which is an inflammatory exudation into the fibrous tissues in almost any situation in which fibrous tissue is found.* This exudate leads to swelling and thickening of very variable character and degree: it may be slight and impalpable; severe and definitely tumour-forming; acute and transient; chronic, and eventuating in hard fibrous lumps which resist all efforts at dispersal by the ordinary means at our disposal; but under all circumstances it tends to be painful.

[1] A paper read before the Leeds and West Riding Medico-Chirurgical Society on Nov. 25th, 1910.

To consider, first, the *nature* of the exudate which results in these thickenings, indurations, or actual nodules. The most probable view is that it is a *focal inflammatory hyperplasia of the connective tissue.* This focal hyperplasia is the result either of direct microbic action or, more probably, of toxins conveyed by the blood-stream, and clinical observations abundantly support the view that these results can be brought about by more than one toxic condition. The inflammatory foci may be limited in number, even to a single area, or they may be scattered widely through the fibro-muscular structures of the body. To quote Stockman:—

> The irritant may give rise to proliferation of the fibrous tissue with serous exudation into the inflamed circumscribed parts, which are tender, painful on pressure, and if large can be easily felt or seen in the muscles and fasciæ and on the sternum or other thinly covered bones. At first they may resolve readily enough, leaving no apparent traces behind, but they tend to return on slight provocation, and if much new fibrous tissue forms in the affected area they become permanent and often increase to a considerable size, or spread out over a large area. The older and more fibrous they become the less tendency they have to disappear spontaneously or on treatment. These indurations assume various forms. Sometimes, especially in the lumbar region or in the fascia lata, large portions of the aponeurosis or subcutaneous fibrous tissue become more or less uniformly thickened, with perhaps more prominent indurations at certain points. In severe cases this gives the skin a hard, inelastic, and brawny feel. More commonly the fibrous indurations are more defined and circumscribed, varying in size from a small shot or split pea to an almond, or even half a walnut. The larger ones may be rounded or flattened, the smaller ones often feel like beaded chains along the fibrous edge of a muscle or aponeurosis. Very frequently the thickening takes the form of a strand or cord running through the fascia or subcutaneous fat. Sometimes they are deeply placed in the intermuscular septa, sometimes quite superficially in the subcutaneous tissue, in which case they may adhere to and often slightly pucker the skin. They can often be felt also as small tender projections on the surface of the ribs and other thinly covered bones.

The more recent or more diffuse exudates give rise, when palpated, to a sensation of lumpiness in an affected muscle, or the whole muscle may be brawny to the touch.

First, as to the term we apply to the local thickening; it may be swelling, induration, or infiltration. All these terms have been used, and only in the more advanced cases is use of the term "nodular" justified. "Induration" is perhaps the best general term and has the advantage of not committing one to a particular pathological view, for the view that an inflammatory fibrous hyperplasia is the underlying lesion has not been universally accepted. Moreover, I do not wish to defend very strongly the term "fibro-myositis," because the condition is probably not really a muscular one at all. "Fibrositis" is a better term. "Myositis" is useful, however, because it directs attention to the frequent involvement of the muscles, even though such involvement be secondary, and, again, because it has been largely used in this connexion, as also the terms "myositides" or "myitides," preferred by the Germans.

My position, therefore, may be summarised thus: all chronic rheumatism is essentially an exudative hyperplasia of fibrous tissue, probably inflammatory in origin, and the clinical characters of which depend upon the amount, persistence, and anatomical situation of such inflammatory exudate. It has a preference for certain fibrous areas, the frequency of ordinary lumbago testifying to this. The varying situation of such inflammatory exudate is well illustrated by the fact that most cases of sciatica are due either to pressure on the nerve by a nodule or to infiltration into its sheath. Many cases of supraorbital neuralgia are similarly explained.

The one almost constant symptom which results from this fibrositis is pain. These infiltrations are painful when they are pressed upon, and if vigorously rubbed they swell up and the pain is greatly increased. To quote Stockman once more:—

> Under the action of certain irritants (cold, damp, meteorological changes, muscular exertion, indigestion, and unknown toxins) these indurations are apt to swell and become tenser, and then they give rise to stiffness, aching, or acute pain. The local tension probably exerts pressure on the filaments of sensory nerves; hence these symptoms. Sudden movement of muscles, by increasing the tension or by exerting pressure on the swollen tissue, often greatly aggravates the pain or causes it to shoot excruciatingly.

This local pain on pressure is practically the diagnostic feature of these cases. If a patient presents himself with any of the ordinary manifestations of chronic rheumatism, as a lumbago, sciatica, pleurodynia, or a cephalalgia, and I would add (having abundantly confirmed it from my own experience) with any obscure myalgic or neuralgic pain in any part of the body, a careful investigation should be made of the fibro-muscular tissues of the affected areas. In the more recent diffuse cases there is general tenderness of these tissues, and one may not be able to feel anything which one could definitely assert to be a palpable thickening. But more usually, either with or without such general tenderness, one will find areas which are definitely, often exquisitely, tender to touch. All that is needed is a careful digital exploration of the structures involved, asking the patient to let you know when you are pressing upon a painful spot, though in many cases such a request is far from necessary. It is astonishing how sharply many of the painful areas can be localised, though, of course, this is not always the case.

Having localised the painful areas, the next point is to determine whether they are definitely thickened, either as doughy swellings, strands or septa, or small beads or hard nodules; all variations occur. The detection of indurations is where the sceptics come in, and with a certain measure of justification. The slighter degrees require much practice for their detection, though no one can mistake a really nodular case. Patients sometimes discover their own nodules, and in an extreme case, which I shall presently describe, the patient was the first to draw attention to them as the source of the pain and described them as "glands." But there are two ways of examining a case. To do it properly you must have the patient symmetrically disposed, and the muscles to be explored must be in a state of relaxation. You must carefully and slowly go over the affected areas, using both light and, if necessary, deep pressure (if this can be borne), comparing exactly corresponding areas of the muscles and fibrous tissues on each side of the body. It aids greatly if the skin be smeared with some lubricant, the fingers gliding more easily over the surface. The wrong method is obviously that which means a perfunctory and asymmetrical palpation of the muscles; this prevents one drawing any reliable conclusions.

If the examination is made in the way I have described, after a little practice in detecting the more obscure forms of infiltration one will be surprised at the number of cases yielding positive findings. Two points must not be forgotten. If the exudation is slight, if it is recent, if it is diffuse, or if it is deep-seated and difficult to reach, one cannot expect a positive result. One localises the pain but one cannot convince one's self of the actual thickening. Again, if one finds a painful and thickened area one cannot in most cases swear to it as a thickening without the most careful comparison with the corresponding region on the opposite side, unless, of course, it is particularly well marked and approximately nodular in character.

A few years ago I did not believe in these infiltrations, though their existence was asserted by competent observers. It simply was not in English literature, therefore one disregarded it. But one or two striking cases led me to think that the teaching of other schools might be worthy of investigation. I then began to study a few of the more obvious cases which came in my way. The positive nature of my findings, and the success of treatment based thereon, led me to more and more detailed investigation of these cases, many of which are labelled anything but chronic rheumatism. As a result of the experience which I have now acquired, it is my absolute conviction that this is the real nature of chronic rheumatism, and that all cases form a connected group, whether slight and negative to palpation at the one end of the series, or abounding in nodules of almost gristly hardness at the other. If this be so I think everyone will agree that my sub-title, "an everyday affection," is justified.

Having now, I hope, made the general nature of these cases clear, I can proceed to cite some actual cases, and in doing so I wish to draw attention especially to the following points: (1) the extreme development as to size and hardness of the more severe indurations; (2) the extreme character of the pain that may result from indurations of every kind; and (3) the secondary nervous phenomena, or states of acute or chronic invalidism which may supervene as results of the extreme or persistent pain. It is difficult to realise, short of actual experience, the severity of some of the cases. A further point, and one upon which I wish to lay the greatest possible stress, is the extremely wide range of the painful manifestations, and the serious, yet at the same time avoidable, diagnostic errors for which this is responsible. But really this is strictly deducible from my foregoing description.

I have said that the fibro-muscular apparatus in practically any situation of the body may be affected, in slight or serious degree, in one area or in many. Certain situations are specially favoured. Implication of the tissues of the lumbar

region causes the lumbago familiar to us all, not only in our patients, but more regrettably and not infrequently in our own persons. One nodule is sufficient to cause an extremely painful and persistent lumbago. This is a clinical fact of the greatest importance. The better-known situations of muscular rheumatism I need not enumerate, but some special situations must be mentioned. A very common but much overlooked group of cases is that in which headache is the prominent symptom, the so-called myalgic or indurative headache. This is due to indurations in the retrocollic muscles, which frequently cause a direct or reflex headache, or to indurations in the temporal or other cranial aponeuroses. The abdominal muscles are not infrequently affected; a single nodule in the abdominal area may give rise to either continuous pain or to the most excruciating paroxysms of pain. Such cases have been wrongly diagnosed as gastric ulcer, appendicitis, biliary and renal colic, and a host of other things. Many negative laparotomies undoubtedly owe their undertaking to a failure to recognise chronic rheumatism.

The two points one has to keep in mind are the almost infinite possibilities as to localisation and the variations in the character of the pain owing to the local intensity of the process. In regard to the almost constant symptom of pain I have mainly laid stress up to now upon its local character, occurring with or without pressure, and upon the general stiffness and aching in the affected areas with which you are all familiar, and also with the acute twinges which occur on sudden exertion. But there are two further points which must never be forgotten—the frequency of the radiation of the pain and of its occurrence in paroxysms, such paroxysms being often of the most excruciating and agonising character. These phenomena are probably due to the involvement of nerves and nerve-endings by the indurations, and in really marked and persistent cases a cure is only possible by excision of the offending nodule. As may be expected, pain, from its persistence and its severity, may break down the resisting power of the patient, and many of the so-called chronic neurasthenics owe their myalgic invalidism to this cause. This is no exaggeration. Paroxysmal pain is always liable to be complicated by secondary and reflex phenomena, of which vomiting is a very notable example.

If now this general description be fully comprehended one could almost describe in advance the varieties of case which one would expect to meet. I do not desire to burden this communication with descriptions of many cases or of any at great length, but those which I now quote illustrate very well both the severity and the protean character of the manifestations of this disease. The following is the most severe case that I have so far seen.

CASE 1.—The patient was an unmarried lady, aged 26 years, whom I first saw in consultation with Dr. O. L. Scarborough of Leeds. Very briefly the history is as follows. She was a healthy and vigorous girl when, about four years before the onset of this trouble, she fractured her coccyx, which was removed by Mr. H. Littlewood. She then suffered from severe indigestion and constipation, and some two years later developed suppurative appendicitis, which was successfully operated upon by the same surgeon. Her indigestion was better, but her health was not good; she had much trouble with her teeth, and soon after the operation began to suffer from pain which may be shortly described as a combination of lumbago and sciatica. This increased in severity, being both continuous at times and paroxysmal. Adhesions were suspected, sought for, and not discovered. About 18 months before I saw her she felt in her own back what she described as little lumps or "glands," which were very painful when pressed upon, and from which the pain appeared to take origin. She underwent various treatments—electrical, thermal, and rubbing—at hydropathic establishments and at home, but got worse. Some six months previous to my seeing her the pain began to take on the most severe paroxysmal character. She had crises of pain which were agonising to her, and which, it is no exaggeration to say, were almost torturing to the onlooker. She became practically never free from pain, was bedridden, almost helpless, and a nervous wreck, with, it is not surprising to record, a considerable train of secondary so-called neurotic phenomena. Her resisting power when I saw her was almost *nil*.

Upon examination I found what had, indeed, been found by her medical man, but which he scarcely thought could account for the extreme severity of the pain—numerous and extensive areas of infiltration in the muscles of the lumbar, gluteal, and sciatic regions. There was no doubt about them. If the pain and the patient would have permitted one could have rolled the more superficial ones beneath one's finger. A large sheet of skin over the right gluteus was markedly infiltrated. One induration at the lower border of the gluteal muscle was so massive and so painful that it had been explored with a needle in the hope of reaching some deep-seated suppuration. I immediately put her under a course of special massage, and later gymnastics; and this treatment, commenced on Sept. 9th, 1910, has at the moment of writing resulted in a progressive improvement, so much so that a helpless bedridden invalid, scarcely able to move, suffering the most excruciating pain, is shortly going abroad.

This result has been accomplished in a period of 11 weeks despite many difficulties, such as the elimination of necessary morphia, and the correction of the most marked secondary neuroses. A serious degree of secondary lateral curvature had occurred, and the treatment is still going on, and will have to do for many months yet before a final cure is accomplished, but the change in the patient's condition was nothing short of dramatic.

The next case demonstrates the serious degree of chronic invalidism which may result; the trouble had a different localisation, and I was able to achieve a great deal of benefit from treatment.

CASE 2.—The patient was a widow aged 52 years. She had some general dyspepsia and constipation. She had been a myalgic invalid for about six years when I saw her on Jan. 1st, 1910, but for the last two years had been so bad that she had been unable to earn her living and had been intermittently bedridden, and was in a truly miserable condition. She complained of pain of varying character and intensity in and about the left shoulder, and radiating thence. Her history was very clear, however, about the pain and stiffness always starting in this neighbourhood. She had pain elsewhere, in the lower lumbar region and in the gluteal muscles. The pain was always brought on or aggravated by movement. It occurred in attacks which would last perhaps a fortnight and then leave an interval of some weeks reasonably free from pain. The shoulder muscles—that is, the spinati, the deltoid, &c.—contained numerous infiltrations, easily identifiable as they were almost nodular in character; I could demonstrate them to my students with ease. These were extremely painful to pressure. Massage and exercises at once improved her. In a few weeks she left the hospital a different woman and returned to her work, which she has since satisfactorily performed. I wrote to her this week to come up for re-examination and found that her shoulder pain had not returned. We did not treat the lumbar region and she now has some pain there; on examination there were numerous doughy infiltrations of the erector spinæ muscles; I have no doubt we shall achieve a permanent cure by treating this area as well.

A further example of the generalised nature of this trouble was furnished by the next case:—

CASE 3.—The patient, aged about 30 years, the son of a medical man, had suffered at frequent intervals since childhood from rheumatic pain, principally in the muscles and fibrous tissues of the back; from time to time exacerbations occurred in which he had myalgias almost everywhere. I saw him first about four years ago, and advised treatment by massage, &c. He was due for foreign service, however, and did not carry out this treatment, because on the West Coast of Africa it was difficult to do so, and the pain, though continuous, was not very severe. I saw him on his return three years later, when his general health was much impaired by malaria, &c. He was then becoming a chronic rheumatic, with serious danger of permanent crippling, and faced with the imminent probability of having to give up the service. His lumbar muscles and aponeuroses presented in abundance the usual painful infiltrations. I put the serious aspect of the case very fully before him and pointed out the necessity for a prolonged course of treatment. Being anxious to have my view confirmed in this particular instance I sent him to Dr. Stockman of Glasgow, who fully concurred with the diagnosis and treatment. Under energetic massage and exercises the patient rapidly improved, but before complete cure could be effected (for the case was a very old-standing one) he returned to foreign service. He had, however, learned the routine of the treatment and promised to have it continued for a considerable time. The amount of improvement in this case far exceeded our expectation in the all too short time at our disposal.

The next case is an excellent example of chronic invalidism brought about by a serious and general infiltrative condition of the abdominal muscles, and to a less extent of the muscles of the back.

CASE 4.—The patient, a woman, aged 36 years, was sent to me by Dr. J. W. Hopkins in June, 1909. She was a chronic dyspeptic. She had suffered from an aggravation of the dyspepsia and epigastric pain for nine months before I saw her; her health was considerably impaired and she had lost much weight. Her medical man feared organic disease of the stomach. On examination I found a good deal of general tenderness in the abdominal wall, but could not identify any definite infiltrative areas. As there was no doubt about the dyspeptic symptoms I thought a trial of treatment on this line was indicated. This was strictly carried out, and though the dyspepsia improved, the pain on the whole increased, and her condition became a miserable one. She was sent to me this week again, and then the explanation of things was abundantly clear. Her pain was caused or aggravated by any movement or strain and was relieved by rest; it was not definitely related to food, and was practically continuous, with neuralgic paroxysms from time to time. All the abdominal muscles and fibrous tissues were tender, and there were numerous areas which were exquisitely sensitive to pressure, and any number of infiltrations and irregularities and small pea-sized nodules could be made out.

I quote this case, not because I am yet able to say what treatment can do, but because it is a typical example of the abdominal type of chronic rheumatism, and one which I feel sure will be quite cleared up by massage if that is persevered with for a sufficient length of time.

The next case is an illustration of one single area of fibrositis giving rise to a diagnosis of cardiac disease.

CASE 5.—The patient was an able-bodied policeman, about 26 years of age, sent to me by Dr. G. W. Middlemiss of Settle. Two years before he had had influenza with severe pain, apparently cardiac. This pain persisted up to the time that I saw him. There had been no cardiac lesion noted at any time, and his medical man had persistently refused to diagnose cardiac mischief, though this had been done by another

medical man and he had been told that he was unfit for his duties as a policeman. I found that the pain could be definitely localised to one tender area, involving the upper attachment of the rectus abdominis to the costal cartilages. This was sharply painful, and pressure on it set up the diffuse pain radiating to the cardiac area of which he had complained all through. I showed him how firm massage should be given, and there being but a single area I felt that massage might in this case be performed at home. This was done. Three weeks later I wrote to his doctor and quote his reply. He says: "I have looked up the policeman and he states that he has not felt so well for two years (i.e., since before his first attack of influenza in November, 1908) as he does now. He started the massage as soon as he returned from seeing you, and to this alone he ascribes the great improvement and diminution of pain, for he has neither taken nor done anything else."

Another striking case of localised pain is the following:—

CASE 6.—A medical man, aged 35 years, had suffered for two or three years from attacks of pain in the upper part of the right chest. This would start as a pain localised approximately in the situation of the second right costal cartilage. It would remain localised for some days and would then become more diffuse, spreading over the front of the chest, causing pain, not particularly severe, with every inspiration. This would last for a few days longer and would gradually disappear, the attacks lasting for about 7 to 14 days. Upon examination this pain could be absolutely localised to a tender spot in the upper border of the second right costal cartilage at its junction with the rib, where there was a slight thickening to be made out. Massage of this area quickly caused it to swell up and become exquisitely tender, but a few days' rubbing effected the dispersal of the swelling and a complete cessation of the pain. So far there has been no recurrence.

The next case is a very good example of the mimicry of appendicitis.

CASE 7.—The patient, an anæmic, delicate lad, aged 13 years, for some years had had recurring abdominal pains with sickness, of uncertain origin. About five months ago he had more or less pain in the neighbourhood of the pubic symphysis and sharp pain throughout micturition. There was tenderness in this area and in the right iliac fossa. By X rays the presence of calculus was eliminated with practical certainty, but a dark shadow suggested that there was possibly a calcareous gland in the right iliac fossa, but entire reliance could not be placed on a single observation of this kind. A few days ago I was asked to see him. His medical man said that his general health had greatly improved, but the attacks of pain had been more severe, more definitely localised to the right iliac and pubic regions, where there was great tenderness on pressure, and he feared a chronic appendicitis and the necessity for an operation. The one puzzling feature, however, was that the pain was felt on pressure over the attachment of the rectus to the symphysis, extending well to the left of the middle line. I found on examination that the pain was entirely superficial—that is to say, in the abdominal wall and localised in and near the right iliac fossa. The lower insertion of the rectus abdominis was markedly tender throughout its length. Muscular and fibrous thickenings could be felt, and here and there was a sharply defined pea-sized nodule at a point of maximum tenderness. The condition extended more than half way up the rectus. Deep pressure in the right iliac fossa, of course, also produced pain by dragging on the tendinous structures attached to the symphysis. This case is too recent to be able to report any result of treatment which has been commenced, but I have no doubt but that we shall cure him in a few weeks.[2]

I commend this and the other abdominal cases of fibrositis very specially to the notice of the surgeons, and I think one is permitted to wonder whether some cases of "appendix trouble" that eventuate in operation, and in which the appendix, when removed, presents practically a normal appearance, may not be of this nature.

The following case is a very excellent example of a shoulder type:—

CASE 8.—The patient was a woman, about 40 years of age, who was sent to me by Dr. J. O. Ward of Ferrybridge. For over a year she had had very troublesome pain in the shoulder and down the left arm. It had seemed to take its onset in what was described as an attack of bad neuralgia in the eyes, back of the head and back of the neck, and shoulders, following influenza. This undoubtedly was the acute onset of a more diffuse form of the trouble. The pain subsequently settled down to the muscles about the left shoulder. It came on in attacks in which there were both continuous pain and sharp neuralgic pain down the arm. The persistence and paroxysmal character of this had been so severe as to raise the suggestion of some organic nerve trouble. Upon examination very definite areas of tenderness and infiltration of the muscle in elongated bands and septa could be made out in the deltoid, biceps, and spinatus muscles. Eight days after the commencement of special massage there was a striking improvement. For the first few days the pain was, of course, aggravated, then it was greatly relieved, and she was able to use her arm in a way which had not been possible for months. The case, of course, is still under treatment.[3]

I must content myself with one example out of many of the cephalalgic type of case, which is, I believe, of much more frequent occurrence than is supposed. In this group the indurations occur in the retrocollic muscles, most commonly in the trapezius and sterno-mastoid, and not infrequently in the temporal aponeuroses. They give rise to headache of the most persistent and recurrent character, and unless this condition be remembered in investigating any cases of chronic headache or cephalalgia, I have no hesitation in saying that many of the cases will be missed and the patient's sufferings pass unrelieved.

CASE 9.—The patient was a man, aged 26 years, sent to me by Dr Scarborough. For ten years he had suffered from severe periodic headache which was increasing and rendering him unfit for his duties. No definite cause had been discovered and no treatment had been of any avail. The history was very striking, in that the attacks of headache always started by painful stiffness in the retrocollic muscles. This is a very characteristic feature in these cases and is almost diagnostic. The trapezius muscle contained numerous more or less well-defined infiltrations. A few weeks' massage cured him. Some months afterwards he greeted me in a tramcar with the most effusive thanks, saying that I had transformed his existence by freeing him from pain.

One is sorely tempted to go on quoting cases, each of which presents some different and specially interesting feature; but I have confined myself to my own recent experience, to the exclusion of remarkable cases to be found in the literature.

With regard to the causation of chronic rheumatism, the limits of space will not permit me to go into detail. It is convenient, however, to consider the etiology under two different headings: (1) as to the original causes of the local fibrous thickenings and nodules; and (2) the causes of the attacks of muscular or neuralgic rheumatism when once these indurations are established.

Original causes.—By many rheumatism is supposed to be one. That true rheumatism does cause fibrous nodules is familiar to you all, and the remarkable and rapid way in which they disappear is a sufficient answer to those who cavil at the curability of the indurations and nodules of chronic fibrositis. Personally, however, I am unable to accept the view that chronic rheumatism, as ordinarily met with, is a sequel of true original rheumatic fever, or, indeed, that it occurs with any frequency in genuine rheumatic subjects. Influenza is responsible for a certain number of the cases; a fact of clinical importance. Exposure to cold and wet is very frequently responsible. My own feeling is that disturbances of the gastro-intestinal tract, such as oral sepsis, flatulent dyspepsia, chronic constipation, &c., all conditions leading to the production and absorption of toxins, play a somewhat important etiological rôle. Trauma certainly explains some cases, either in the form of frequent slight traumata from over-exertion, as in athletes or labourers, especially when coupled with exposure, or in the form of local injury. This undoubtedly gives rise to the condition, and is a point which is well worth bearing in mind in regard to certain cases occurring under the Workmen's Compensation Act. I quite admit that the majority of the alleged persistent pains and neuralgias which occur in these cases (the painful back and spine being common examples) come very near to deliberate malingering. On the other hand, I am quite certain that some of the cases are genuine examples of the condition we are discussing, and I have been able by suitable treatment to clear up such local pain. An opinion is, perhaps, rather widely held that chronic fibrositic rheumatism is a disease of middle and later life, but this is not so. It is very common in adolescence and in early middle life.

The exciting causes of pain after the indurations have once formed.—These are well known to you all and include various meteorological conditions, cold and damp being most prominent. Violent muscular strain is another frequent cause. Acute indigestion, especially resulting from dietetic indiscretions in which champagne and port frequently play a part, is especially liable to precipitate an attack. Many cases also supervene upon an ordinary tonsillitis or pharyngitis, possibly due to septic absorption from this source.

Treatment.—Many of the cases are of an acute type, with general malaise and widespread myalgia. These frequently clear up but may settle down into a more chronic condition. There may be a slight degree of temperature. General treatment meted out to a feverish attack, with the employment of the ordinary pain-relieving drugs, is generally sufficient to effect a cure. If the pain is at all localised a single thorough application of massage may result in cure in this early stage.

The treatment of the chronic cases.—General treatment.—The removal of any discoverable cause, such as gastro-intestinal irregularities, must be undertaken, and will not only help towards a cure, but will tend to prevent recurrences. During the more acute exacerbations drugs such as sodium salicylate, antipyrin, or pyramidon, and the various means described in the acute attack produce a certain measure of relief, but recurrence is liable to occur indefinitely. To obtain a permanent cure and a complete relief from the recurrent attacks it is absolutely necessary

[2] Since writing the above I am able to report that the pain entirely cleared up in about two weeks' massage, and has so far not returned.

[3] The patient is now perfectly well.

that local treatment should be adopted with a view to obtain a complete dispersal of the indurations.

Local treatment.—There are, of course, palliative forms of local treatment. Counter-irritation by blistering or cautery produces relief. Nothing, perhaps, is so efficient as the rubbing in of oil of gaultheria. But these measures are at best temporary; mechanical treatment must be adopted to secure a permanent dispersal. The most important of the forms are massage and systematic exercises. Acupuncture is undoubtedly of great use in relieving the pain, but in my experience does not produce complete dispersal of the infiltrations. Injection of chromic acid into the nodules has its advocates, and is undoubtedly useful, but I think it is a less convenient form of treatment than massage and may be reserved for the more refractory cases. In cases of fibrous nodules which will not yield to simpler measures, and which by implicating or pressing upon nerves cause persistent pain, excision is not only advisable but necessary, the only caution being that the nodule must be very definitely localised beforehand.

Massage.—The form of treatment which for over a century has been almost uniformly given first place is some form of massage, and exercises which are designed to replace massage for inaccessible areas and wide tracts and sheets of fibrous tissue. In recent cases from three to ten days will cause dispersal, in more chronic cases weeks or months may be required, and if the indurations have become too fibrous a cure short of excision cannot be expected. There is scarcely any painful ailment of everyday occurrence in which the results of massage are so striking and gratifying as in the more recent cases, while, on the other hand, the cases of years' standing are liable to prove disappointing. This, of course, merely constitutes a plea for the earlier and wider recognition of the disease. Massage should at first be gentle because it causes the painful areas and infiltrations to swell up and to become still more painful and very acutely sensitive to pressure. The patient must always be warned of this, otherwise discouragement will result. In ordinary cases the painful stage is over in a few days, and during this time the patients are often with advantage confined to bed. After that they should get about as much as possible, for exercise is beneficial and tends to improve the condition. This in itself is a striking gain, for with many physicians the routine treatment of these cases is rest. Rest relieves, it is true, because the tender areas are not pulled upon or pressed, but for the most part the disease takes its own time to clear up and not infrequently fails to do so. By active treatment we not only cure but very materially shorten the duration of the disease. Instead of confining your business man with lumbago or sciatica to bed for longer or shorter periods, you can very quickly have him going about his ordinary affairs while at the same time continuing his treatment.

Just a word as to massage. The drawback is its expense, and I know no way of obviating this. Secondly, it is always desirable to employ *skilled* massage, and herein I must digress a little. Some of my patients, on being advised to have massage, inform me that that has already been tried and found to be useless. On inquiry one feels certain the reason why such massage was useless was that the tender areas were left alone because they were tender, and rubbing was directed quite uselessly to those parts which did not require it. In no instance of this kind which has come under my notice has massage failed to be of benefit when given according to my instructions. General massage is useless. The one thing useful is that the tender and infiltrated areas shall be specially marked out for treatment, and the character and vigour of the massage must be varied to suit the requirements of a particular case. I regret to say so, but I have very little confidence in the majority of English-trained masseurs. England at the present moment is flooded with a host of so-called trained rubbers. A large number of these people when calling on one claim to be certificated for massage and medical gymnastics. I daresay they are, but their certificate is obtained on from three to six months', or less, training. Apart from the fact that this results in an almost complete lack of anatomical knowledge, it does not constitute a training. The course in the Swedish school is a full two years' one, and there special attention is devoted to the very numerous class of cases with which we are dealing. To put a case of this kind under a Swedish rubber is to hand it over to an expert. The ordinary English masseurs know practically nothing about this condition (though efficient training *can* be got in England), whereas the Scandinavians not only recognise it, but almost without exception, when cases fall into their hands, treat them at once and successfully without any special directions, and often without any definite diagnosis from the medical man. A correct and nice knowledge of anatomy is of great help in securing the best and most rapid results, and that is just what distinguishes well-trained operators from the rabble of rubbers, comparatively unskilled and anatomically uneducated, which floods our own country.

In conclusion, I would ask practitioners to put the statements that I have made to the test of investigation. Most of us, I am sure, are able to recall difficult cases of persistent neuralgia which baffled elucidation and failed to respond to treatment. To say that such cases were all due to chronic rheumatism would be untrue, but a very large number of them probably were. To treat chronic rheumatism as I have suggested is to get results which are as rapid as they are certain, if the cases be taken early enough, with, naturally, much gratification to the patient. With regard to the infiltrations, which in many cases are slight and elusive, I can only say that their existence is genuine and undoubted, and the advice which one would give, both in regard to them and to cases of chronic rheumatism in general, is "Seek, and ye shall find."

Bibliography.—Ralph Stockman: The Causes, Pathology, and Treatment of Chronic Rheumatism, Edinburgh Medical Journal, 1904 (this paper contains a useful bibliography). Hutchison and Collier's Index of Treatment, art. Chronic Rheumatism. N. S. Jawger: Chronic "Rheumatic" Myositis (Muskelschwielen), THE LANCET, July 31st, 1909. J. Odery Symes: The Rheumatic Diseases.

Leeds.

THE INFLUENCE OF CHLOROFORM WHEN REPEATEDLY ADMINISTERED IN SMALL DOSES.

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THE very striking results obtained when administering a single large dose of chloroform and referred to at length in a paper published in 1908 (1)* suggested to the author that a very much smaller dose might have some influence on the tissues of an animal, particularly when the small dose was repeated daily.

Sir James Crichton-Browne in 1907 (2) called attention to the habit in certain districts of taking lozenges and jujubes containing chloroform, and pointed out that samples of the lozenges contained as much as 2·9 per cent. of chloroform. He pointed out that these lozenges are taken in considerable quantity and over long periods, and he expressed the opinion that such repeated doses must be harmful. The repeated administration of small doses of this drug by the stomach to lower animals is therefore of practical as well as of scientific interest.

In the series of experiments undertaken rabbits were used throughout and the chloroform was administered as in the paper referred to above in one of three different ways—either by inhalation, by the mouth, or subcutaneously. The weight of the animal was taken day by day, and after death in many cases the weight of the heart was taken, and also the weight of the spleen. In all cases portions of liver, spleen, kidney, and heart were examined for fat and also stained and examined for degenerative changes. In the first experiments of the series the animals which were injected with $CHCl_3$ had 0·2 c.c. on two consecutive days, and two days were allowed to elapse before this procedure was repeated. This method proved so rapidly fatal that in the subsequent experiments 0·1 c.c. of $CHCl_3$ was injected daily. In the cases where the rabbits received the $CHCl_3$ in the form of an inhalation they were rapidly anæsthetised and then kept lightly anæsthetised for 15 minutes. In the first experiments of this series this was done daily, but as all the

* The parenthetical figures throughout the paper refer to the bibliography at the end.

animals used died while under the anæsthetic after a very few days the procedure was modified and the anæsthetic given on alternate days. When $CHCl_3$ was given by the stomach it was found that $CHCl_3$ water was easily tolerated by the rabbits and consequently 40 c.c. of this solution were given daily. This contained 0·08 gramme of chloroform. In some cases the rabbits lapped up the fluid without trouble, but in most instances a stomach tube was passed under light ether anæsthesia and the $CHCl_3$ water administered through this. Considering the results of the experiments throughout the series the effect of the $CHCl_3$ administered in the various ways upon the well-being of the animal may be studied by an examination of the weights from day to day. The weights are given in grammes.

TABLE I.—*Administration by Inhalation.*

No.	Day.									
	1st.	2nd.	3rd.	4th.	5th.	6th.	7th.	8th.	9th.	10th.
6	1470	1450	—	—	—	—	—	—	—	—
7	950	920	860	770	—	—	—	—	—	—
8	2250	2250	2120	—	—	—	—	—	—	—
12	1850	1725	1750	1780	1880	1855	1850	1870	1855	1750
20	2300	2275	2270	2270	2250	2300	2400	—	—	—
22	2050	1975	1950	1900	1850	1850	1800	1750	1700	1625*
24	2250	2170	2250	2150	2250	2250	2100	2150	—	—
26	1600	1600	1700	1750	1750	1750	1700	—	—	—
27	1650	1600	1550	1700	1750	—	—	—	—	—
30	2050	1950	1800	1670	1600	—	—	—	—	—
32	2370	2270	2280	2250	2300	2100	2050	1950	1925	1950†
36	1600	1550	1550	1550	1600	1600	—	—	—	—

* Survived for one month. Weight at death 1400 grammes.
† Survived for two months. Weight at death 1840 grammes.

Where the administration took place daily the weight fell fairly rapidly. In the case of rabbit No. 7 the weight had fallen nearly 200 grammes in four days. Where the administration was upon alternate days there was in most cases but little change. The daily rise or fall was similar to what was observed in control rabbits. In a few cases, however, a marked fall in weight took place—e.g., rabbits Nos. 22, 30, and 32. The rabbits took food well, and some lived for a long while, having the chloroform administered as described—e.g., No. 22 lived for more than a month and No. 32 for nearly two months.

TABLE II.—*Administration by Subcutaneous Injection.*

No.	Day.											
	1st.	2nd.	3rd.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	11th.	12th.
1	*1150*	*1150*	1100	1050	1070	*1075*	*1100*	1050	1070	1000	—	—
2	*2000*	1950	1890	*1925*	*1900*	—	—	—	—	—	—	—
3	*1550*	1550	1520	*1470*	*1550*	1450	1430	1450	—	—	—	—
	Daily Injections of 0·1 c.c.											
4	1700	1680	—	—	—	—	—	—	—	—	—	—
5	1430	1400	—	—	—	—	—	—	—	—	—	—
13	2400	2450	2430	2230	—	—	—	—	—	—	—	—
16	2700	2630	2520	2625	2500	2470	2400	2310	2220	2180	2150	2130
19	1700	1680	1700	—	—	—	—	—	—	—	—	—
21	3100	3050	3050	3000	3050	3020	2975	2930	2900	2850	1 mnth	2725
25	1650	1550	1470	1450	1450	1350	1300	1350	1300	1375	1350	1250
28	1500	1400	—	—	—	—	—	—	—	—	—	—
29	1150	1150	1150	1150	1100	1060	—	—	—	—	—	—
31	2450	2420	2280	2250	2350	2450	2300	2150	2100	1950	26 days	1350
37	1325	1300	1200	1100	1200	1200	1150	—	—	—	—	—

In the first three experiments cited above 0·2 c.c. of the anæsthetic was injected on the days signified by italic figures, and it will be noted that the effect of the injections is to lower the weight on the day or days following. This effect is very much more marked in the nine experiments of the second series when the chloroform was given daily until the animal died. Here a considerable fall in weight is shown in some of the animals. In rabbit No. 21 there is a loss of 720 grammes in a month, and in rabbit No. 31 a loss of 1100 grammes in a somewhat shorter time. In many of the animals the loss in weight is very slow at first, but as time progresses it becomes much more rapid. The effect upon weight of administering the chloroform in this way is much more marked than when the drug is administered by inhalation on alternate days, but not so rapidly fatal as where it is given daily in that manner.

TABLE III.—*Administration by the Stomach.*

No.	Day.											
	1st.	2nd.	3rd.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	11th.	12th.
9	2380	2320	2200	2250	2250	2160	2210	2175	—	—	—	—
14	2300	2350	2380	2380	2240	—	—	—	—	—	—	—
15	2150	2025	1975	2050	2150	1950	1925	1900	1940	1875	1870	1870
18	2400	2520	2500	2550	2450	2300	2150	4 months later 1350				
23	1700	1700	1750	1700	1650	1550	1500	1500	1450	—	1 mnth	1620
33	2100	2000	2000	1900	1900	1800	1700	1650	1600	1550	1475	—

The amount of $CHCl_3$ given by this method was somewhat smaller than that given in the two previous series, being about 0·08 gramme per diem, but this amount, small as it is (about the same as the $CHCl_3$ content of one lozenge as described by Crichton-Browne (2)), caused a progressive diminution in weight in the animals. In all these cases the diminution in weight was marked, with the exception of No. 14, where a rise in weight was found. The death of the animal was, however, preceded by a very considerable fall. In No. 18 the rabbit tolerated a daily dose for over four months, but it is significant that in that time the animal had lost nearly 50 per cent. of its original weight—or rather more than a kilogramme.

Histological Changes.

Concurrently with the alteration in body weight in the animals under experiment histological changes in the organs and tissues examined were found. These changes were for the most part similar to those already described by Bandler (3), Heintz (4), and Ajello (5), and later by Doyon (6) and Billet (7).

Administration by Inhalation.

As in the previous series of experiments (1) the kidney and liver suffered considerably when chloroform was administered in this way. The degree of degeneration, however, varied in the different cases, and the difference in degree was not always dependent upon the number of administrations, nor was the change equally marked in the kidney and liver. For example, in the kidney the greatest alteration from the normal was found in animals No. 22, which survived for 31 days, and No. 36, which only survived for six days. The liver in No. 22 was also very badly degenerated, whereas that of No. 36 was not markedly changed. On the other hand, the liver in rabbit No. 30, which lived for five days, showed marked degenerative changes. The cells were coarsely granular and vacuolated; the nuclei took the basic stain badly and fat was abundant. On the whole, it may be stated that the degeneration in the kidney was the most marked feature of administration in this way, and that the kidney was invariably the seat of much change. A point of interest lies in the fact that most of the specimens showed that the glomerular tuft had shrunk away from its capsule—a phenomenon which I showed in a previous contribution was only present after very great changes had taken place in the organ. The liver suffered most in those cases which survived for a considerable time, whereas those animals which succumbed at an early date showed generally a much smaller degree of change. Fat was detected in all instances, the stain used being Scharlach R. The fat was almost always abundant, and generally involved the cells at the centre of the lobule first and extended outwards subsequently.

The spleens of all the animals were examined and the sinuses were invariably found to be engorged with blood. A considerable quantity of an orange-coloured pigment was generally present, and in most instances enormous phagocytes were abundant, the phagocytes being distended with

red corpuscles and often with pigment. The weight of the spleen varied considerably. Four control animals yielded an average weight of 0·78 gramme, each of the animals weighing 2000 grammes or over.

TABLE IV.—*Weight of the Spleen in Animals Anæsthetised.*

No.	Original weight of animal.	No. of days.	Weight of spleen.
12	1850 grammes.	20	2 grammes.
20	2300 ,,	7	0·9 gramme.
22	2030 ,,	31	1·2 grammes.
24	2250 ,,	8	1·95 ,,
26	1600 ,,	7	0·6 gramme.
27	1650 ,,	5	1·4 grammes.
30	2050 ,,	5	0·72 gramme.
32	2370 ,,	65	1·2 grammes.
36	1600 ,,	6	1·2 ,,

The average weight of the animals was 1900 grammes while the average weight of the spleens was 1·24. A large increase of iron, as demonstrated by the relative amount shown by the ferrocyanide HCl stain on the sections, was found in all cases.

In examining the animals after death it was frequently found that the heart muscle appeared flabby and often the walls seemed unusually thin. These organs were therefore fixed and examined for histological changes. The heart muscle stained unequally; some parts appeared quite normal, while other areas showed a granular appearance quite unlike the normal; the transverse striations were lost and the fibres were often segmented. The nuclei in these parts were poorly stained and in some specimens little was left but a mere indication of the position which they occupied. A large number of the cells were vacuolated. This appearance is referred to by Ungar and Junkers (8), and by Heintz (4). The granular and broken-down appearance was very marked in some of the hearts examined, notably in Nos. 12, 20, 22, and 24, but not so marked in No. 32, where the animal survived for 65 days.

It may be noted here that all the animals referred to above died while under the anæsthetic, either while the drug was being administered or within five minutes after stopping the administration.

Administration by Subcutaneous Injection.

In the cases of animals Nos. 1, 2, and 3 chloroform was given in doses of 0·2 of a cubic centimetre, and the doses were given irregularly, as shown in Table II. The results in these cases are therefore not strictly comparable with those obtained by daily administration of 0·1 c.c., but they are included here as they illustrate the points to be brought out in this paper.

The animals referred to other than the above received 0·1 c.c. hypodermically each day. The injection appeared to have no immediate effect, and the rabbits so treated were as active after as they were before the administration. Of those which were injected with the larger amount one died after four and two after three administrations, so that the drug was rapidly fatal. Those rabbits which were injected with only 0·1 c.c. lived for longer periods, the average being 11 days. The longest period a rabbit lived during the administration was 30 days and the shortest two days.

The organ which appeared most affected histologically was the liver, and here the changes were comparable with those referred to in a previous paper (1). In one instance, where the rabbit survived for 30 days, the liver was found to be of an orange colour, and contained masses of an orange- or yellow-coloured pigment like that observed in the spleen, and similar to that described by Fraenkel (9), Marthen (10), and Cohn (11). This pigment gave a positive stain for iron. There did not appear to be atrophy. In a few of the livers examined, particularly when taken from animals which had lived for some time, a considerable amount of white fibrous tissue was found between the lobules, as described by Fiessinger (12). The kidneys also generally showed some degree of degenerative change, although in many instances but little alteration from the normal was observed. Congestion and hæmorrhage were generally found, and in the kidneys taken from the animals which were injected with the larger dose of the drug the degeneration in the convoluted as well as the straight tubules was very marked. Frequently the tubules were packed with débris and desquamated epithelium. Where the degeneration was far advanced fat was always found in the degenerated cells. On the whole, however, the kidney appeared to be affected to a somewhat slighter degree in this method of administration.

The spleens showed much the same condition as did those in Table IV. The amount of iron present as shown by the ferrocyanide HCl method of staining was very great, and in No. 19 when the animal was killed after three administrations fully half of the spleen section stained green by this method of staining. The large phagocytes referred to above were also present here in large numbers.

TABLE V.—*The Weights of the Spleens and other Particulars.*

No.	Original weight of animal.	No. of days.	Weight of spleen.
16	2700 grammes.	13	1·5 grammes.
21	3100 ,,	30	1·85 ,,
25	1650 ,,	15	0·67 gramme.
28	1500 ,,	3	1·2 grammes.
31	2450 ,,	26	1·5 ,,
37	1325 ,,	7	1·5 ,,
Average...	2121 ,,	16	1·37 ,,

Thus the average weight of the spleens was 1·37 grammes, as compared with an average weight of 0·78 gramme in the control animals. The hearts generally showed degenerative change, although this was not always marked. Granular cells with loss of the cross-striped appearance were common, and in most cases the nuclei stained irregularly; sometimes the peripheral part of the cardiac muscle appeared to have suffered most, at other times the central parts.

Fat was not observed in any of the hearts examined for it, therein differing from the findings of Fraenkel (9) and supporting Heintz (4).

Administration by the Stomach.

The method of administration adopted here was not by any means so rapidly fatal as either of the other methods, contrasting in this with the administration of larger doses in olive oil as detailed in a previous paper, where this was the most fatal method of administration. The average length of life during the administration was 16 days, not taking into account the animal that lived for four and a half months receiving an administration each day. As might also be expected, the liver suffered most of any organ when the chloroform was administered in this way. The amount of degenerative change was great in all cases, but was of a different type in those animals which lived for some time to that in those where death took place in a few days. In those dying soon the cells showed albuminous degeneration, vacuolation, and on two occasions all that could be made out of the liver cells was a kind of network outlining spaces which contained a poorly staining central nucleus surrounded by a small amount of coarsely granular protoplasm. In rabbit No. 18, which lived for more than four months, there was a very great deal of fibrous tissue throughout the liver. Large openings were found irregularly distributed throughout the specimen, and the altered cells showed no sign of definite arrangement.

The greatest degenerative change was observed in No. 33, where the centres of the lobules had lost all trace of their cellular components and were made up of a cheesy mass containing numerous dark granules. Abundance of fat was always found.

The kidneys had on the whole suffered comparatively slightly, although in Nos. 14 and 33 the cells in places were badly degenerated, showing but little sign of the original structure. In No. 33 the glomerular tufts were shrunken, and in a few places in the cortex as well as in the medulla the cells of the tubules were entirely lost. There was rarely congestion and no hæmorrhages were found.

In the spleen the sinuses were found distended with blood, and pigment was present. In Nos. 14, 15, and 23 the amount of iron shown by the ferrocyanide HCl stain was but small, although in 18 and 33 the amount was very great.

The large phagocytes were numerous in those specimens which contained much pigment.

TABLE VI.—*The Weights of the Spleens and other Particulars.*

No.	Original weight of animal.	No. of days.	Weight of spleen.
14	2300 grammes.	5	1·2 grammes.
15	2150 ,,	14	0·3 gramme.
18	2400 ,,	140	1·5 grammes.
23	1700 ,,	30	0·96 gramme.
33	2100 ,,	11	0·8 ,,

The average weight of the animal was 2130 grammes, while the average weight of the spleens was 0·95 gramme, the latter average being 0·17 gramme above the normal. The hearts showed very little variation from the normal, and the cross striping was seen plainly in all the specimens examined.

Consideration of Results.

In reviewing the results of the experiments detailed above, it appears to be proved that given in the form of small doses frequently repeated chloroform is a much more dangerous drug than when given in a single much larger dose. The first doses given appear to lower the vitality of the tissues, so that the later doses have a more marked action.

Idiosyncrasy or a number of undetermined factors appear to influence the action of chloroform on animals, and we find enormous variations between the shortest time and the longest time an animal lived during the administration.

In all the animals examined the liver appeared to have suffered greatly, although, as was to be expected, the most marked degeneration was found where the anæsthetic was given through the stomach. When the drug was inhaled the kidneys seem to have suffered more uniformly than in the other cases, and although the degree of degeneration was not always great, the difference in degree between kidney and liver degeneration was not nearly as marked as when the chloroform was given in either of the other ways.

Very great changes were seen almost uniformly in the spleen even in the animals that died in a few days. The evidence of extensive hæmolysis was most marked. The large-sized phagocytes in many cases distended with dead red corpuscles and in other cases containing a pigment which gave a positive stain for iron, the masses of such pigment apparently lying loose in the spleen, and the large size and weight of the organ all demonstrated its increased activity (Paton and Goodall) (14). The organs in which this increased activity was least manifest were those removed from the rabbits which received the administration through the stomach much diluted with water. Here the average size of the spleen was small and the weights corresponded. The average weight was only 0·17 gramme above the normal, whereas in the other experiments the increase was 0·46 gramme when chloroform was inhaled and 0·59 gramme where it was injected.

When chloroform was inhaled it seemed to have a more marked action on the heart muscle than when it was given through the stomach or injected. Fat was not detected in the hearts examined.

In connexion with the administration by the stomach, it is of interest to note that the amount of chloroform given in each administration was comparable with the quantity described by Sir James Crichton-Browne (2) as being present in one linseed, liquorice, and chlorodyne lozenge. The average weight of a full-grown rabbit is about 2 kilogrammes, while 70 kilogrammes represents the weight of a full-grown man. Thus 30 to 40 of these lozenges per diem in a man gives the same proportion of chloroform to body weight as in the experiments, and correspondingly less in a woman or a child. Many rabbits are very susceptible to the action of chloroform, but even in the one example where the animal lived for a long while the liver changes were of a very striking description. The lesions found in rabbits closely resemble those reported in fatal human cases of chloroform poisoning by Stiles and McDonald (15) and others.

The mortality among rabbits which have been anæsthetised through the respiratory passages and the changes in heart, liver, and kidney found after death emphasise the danger of repeated administration by this method, even when the anæsthetic is only exhibited for very short periods.

Summary.

1. Chloroform repeatedly administered by the respiratory passages, subcutaneously, and by the stomach in small doses rapidly kills rabbits.

2. The liver shows degeneration of the cells sometimes so marked that the whole centre of the lobule is broken down into débris. The cells in the centre of the lobule are early affected, those further out later. Fat is always present, generally in large quantities.

3. The kidney suffers to some extent, but relatively more when the chloroform is inhaled than when injected or given by the stomach. Fat is occasionally found in degenerated cells.

4. The spleen shows intense congestion, the sinuses being packed with red blood corpuscles. Along with the red corpuscles an orange-coloured pigment is generally present which reacts to the stain for iron. A large number of very large phagocytes are present in most cases. The average weight of the spleen was 0·46 gramme heavier than the controls when chloroform was inhaled, and 0·59 gramme and 0·17 gramme heavier when injected and when given by the stomach respectively.

5. Degenerative changes were observed in the cardiac muscle. Fat was not observed in any of hearts examined.

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Bibliography.—1. Clark: Proceedings of the Royal Society of Edinburgh, vol. xxix., part v., p. 418. 2. Crichton-Browne: Food Fencing: Presidential Address to Sanitary Inspectors' Association, 1907. 3. Bandler: Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie, 1896, i., p. 303. 4. Heintz: Inaugural Dissertation, Rotterdam, 1896. 5. Ajello: La Clinica Chirurjica, 1895, vol. iii., p. 158, 6. Doyon: Comptes Rendus de la Société de Biologie, vol. viii., pp. 30, 108. 7. Doyon and Billet: Comptes Rendus de la Société de Biologie, vol. viii., p. 853. 8. Ungar and Junkers: Ueber fettige Entartung in folge von Chloroform-inhalation, Bonn, 1883. 9. Fraenkel: Virchow's Archiv, Band cxxvii., S. 381, and Band cxxix., S. 254. 10. Marthen: Berliner Klinische Wochenschrift, 1866. 11. Cohn: Deutsche Zeitschrift für Chirurgie, 1902, Band lxiv. 12. Fiessinger: Comptes Rendus de la Société de Biologie, 1908, p. 649. 13. Howland and Richards: Journal of Experimental Medicine, vol. xi., p. 344. 14. Paton and Goodall: Journal of Physiology, vol. xxix., June, 1903. 15. Stiles and McDonald: Scottish Medical and Surgical Journal, August, 1904.

Glasgow.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF NERVE DEAFNESS IN A SYPHILITIC OF THIRTY YEARS' STANDING.

BY ARTHUR H. CHEATLE, F.R.C.S. ENG.,
AURAL SURGEON, KING'S COLLEGE HOSPITAL.

A MAN, aged 51 years, complained of deafness in both ears, the right being the worse, and "ringing" tinnitus. The trouble had begun insidiously seven or eight years previously and seemed to have become stationary. Any noise around him made him feel deafer. He had not suffered with giddiness, headache, herpes, or facial paralysis, and there was no history of anything to cause deafness with the exception of syphilis at the age of 21 years. According to the history, consistent treatment of the syphilis had only lasted six months. There had not been any tertiary lesion and there had not been any girdle or lightning pains.

On examination, there was nothing abnormal in the membranes, nose, nasopharynx, or pharynx. The conversational voice could be heard at 2 inches on the right side and six inches on the left. The forced whisper was not heard on the right side and only at the meatus on the left. The tuning-fork tests clearly demonstrated internal ear deafness. The Eustachian tubes were quite clear on catheterisation, which made the ears feel decidedly "stuffy." The pupils were not contracted and were equal and reacted to light. There was no nystagmus. The knee-jerks were brisk. There was no incoördination, disturbance of equilibration, or loss of sensation, and no evidence of any other nerve implication. Dr. W. d'Este Emery reported that the blood gave a powerful Wassermann reaction.

In opening a discussion on "Syphilis in Relation to Otology" at the Otological Section of the Royal Society of

Medicine in November last, I had stated that "I cannot be certain that, apart from tabes, there is a progressive sclerosis of the auditory nerve alone," but this case appears to me to be of that nature and is probably a type which will not infrequently be met with. Cases of progressive internal ear deafness and tinnitus with a slow and insidious onset occurring without any assignable cause are strongly suspicious and demand the Wassermann test. I am as yet unable to say what effect antisyphilitic treatment will have.

Savile-row, W.

A CASE OF ACONITE POISONING.

By T. INGLIS, F.R.C.P. EDIN.

THE patient, a married woman, aged 45 years, a multipara, had suffered from rheumatism, shortness of breath, and swelled feet. She was at the beginning of the menopause and had had two or three floodings. Lately she had been upset by family and money matters which brought on neuralgia and aggravated gloomy thoughts of impending evil. To save money she went to a London hospital, where she was supplied with a mixture and liniment. The latter was in an ordinary clear medicine bottle, but marked "The Liniment" on a red poison label. Next morning, not feeling well, she carelessly drank by mistake about three ounces of the liniment, not noticing the label, it being turned towards the wall. At once she recognised that a mistake had been made from the taste of camphor (most officinal liniments contain it), followed by a hot tingling feeling in the mouth, then numbness. A sick giddiness crept over her, with gastric pains, and she collapsed on the floor, where she was found two hours later by her husband. He sent to a druggist for ipecacuanha wine, and administered a strong emetic. But by this time most of the poison had been absorbed and very little of it was returned. Feelings of sickness continued and a violent attack of clonic convulsions supervened. There was a delay in getting the medical man, who found the patient lying on the floor speechless, cold, pale, skin moist, pulseless, respiration very faint and irregular, and the pupils dilated and insensitive. The temperature was 96·6° F. There was no ptosis. At intervals she was able to gasp out that there was terrible gastric and abdominal pain and that all the body was alive with irritation and pricking of the skin, succeeded by numbness. The latter fact, together with the pallor and damp skin, pointed to aconite poisoning to the exclusion of belladonna. Three times after attacks of clonic convulsions she appeared to be dead, but when they ceased the mind was clear and unaffected. As ipecacuanha (a cardiac depressant) had been given, it was thought advisable only to give one mustard emetic to save the enfeebled heart. The head was kept low, the feet were raised, a sinapism was placed over the heart, and hot bottles and flannels were applied to the lower extremities and abdomen. Strychnine and digitalis were given hypodermically and brandy was injected per rectum. Artificial respiration was unceasingly kept up. After an anxious six hours the breathing became stronger, an irregular intermitting pulse could be felt at the wrist, whilst the body warmth slowly returned. A little coffee and brandy were swallowed and retained. So the crisis passed. There was no purging at any time, but subsequent actions of the bowel were hard and gritty, possibly from particles of the powdered aconite root. The quantity of aconite taken may be roughly estimated as sufficient to kill six persons.

Yokohama.

LECTURES ON MILK.—A course of six lectures on Milk, followed by practical work, will be delivered by Dr. A. Harden, F.R.S., on Thursday evenings, at 7.30 o'clock, at the South-Western Polytechnic Institute, Manresa-road, Chelsea, S.W., commencing on Feb. 2nd. The following subjects will be dealt with: (1) The Chief Properties of Milk; (2) Bacteria in Milk; (3) Changes Produced in Milk by Bacteria; (4) Spread of Disease by Milk; and (5) Preventive Measures. A practical class will be held immediately after the lecture, the work of which will include simple methods of ascertaining the composition of milk and the detection of impurities and preservatives in milk.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

Exhibition of Cases.

A MEETING of this section was held on Jan. 13th, Mr. W. BRUCE CLARKE being in the chair.

Dr. J. D. ROLLESTON and Dr. N. S. MACNAUGHTAN showed three cases of Familial Pigmentary Dermo-fibromatosis. The first patient was the father of the two other cases. He was aged 47 years. He had not suffered from any illnesses beyond scarlet fever and measles in early childhood; his general health was good, apart from "bilious attacks" about once a month. He had had the nodules and pigmentation as long as he could remember; he did not know which appeared first. Nodules had become more numerous since a severe attack of pneumonia 13 years ago. Both parents were alive; his father, aged 72 years, showed numerous small nævi and moles on the trunk; his mother, aged 73 years, had some nævi on the trunk and a large area of pigmentation in the lumbo-sacral region; both showed slight yellowish tinge of skin. The trunk of the patient was thickly set with molluscous tumours, mostly sessile, in all stages of development. There were a few lesions on the face and limbs. The skin of the abdomen and inner side of the thighs showed yellow groundwork of pigmentation, with pigmented spots and a few *café-au-lait* patches. The pigmentation of the anterior axillary folds was well marked. There was no pigmentation of the buccal mucosa and no deformities of the skeleton nor mental symptoms. The knee- and ankle-jerks were active. The plantar reflex was flexor. The blood count was normal, and the blood pressure was 130 mm. Hg. The second case was a daughter of the first patient and was aged 13 years. There was a general yellowish tinge of the skin and punctiform pigment spots and *café-au-lait* patches were scattered over the neck, the trunk, the arms, and the thighs; there was one ink-spot over the left costal margin and there were numerous blue spots, some slightly raised above the skin, on the trunk and the thighs, one being on the left upper arm. There was a nævoid growth of the right half of the upper lip, displacing upwards the ala nasi; the skin over it had a bluish tinge and was covered with fine hairs. The corresponding alveolus had a prominent bony ridge. There was a small nodule in the left frontal region at the margin of the hairy scalp. Slight scoliosis was present and the intelligence was good. She suffered from "bilious attacks" about every two months. A mild attack of diphtheria occurred in November and December, 1910; since the commencement of the attack blue spots had become more numerous. Blood examination showed slight anæmia. The third case was another daughter, aged 5 years. There was a general yellowish tinge of skin, punctiform pigment spots, and *café-au-lait* patches on the neck and trunk; the limbs were free; no molluscum was present. Diphtheria occurred in November and December, 1910; the mother thought that the patches had become more numerous since the beginning of the attack. The other two children, both boys, aged 14 and 10 years respectively, showed slight yellowish tinge of the skin but no molluscum or pigmentation. The eldest boy had one small mole on the chest and another on the left buttock. Microscopical examination of one of the father's tumours and of the eldest daughter's blue spots showed presence of fibrous tissue but no nerve fibres. Dr. Rolleston said that he and Dr. MacNaughtan had applied the term invented by Professor Chauffard of "pigmentary dermo-fibromatosis" to the condition illustrated by that family in preference to neuro-fibromatosis for three reasons: (1) The lesions appeared to be independent of the cutaneous nerves; (2) there were no nodular swellings on the deeper nerves; (3) histological examination of sections in the cases of the father and eldest child showed an absence of nerve fibres. The condition was undoubtedly closely related to von Recklinghausen's disease, of which it might be regarded as an incomplete form, or *forme fruste*. In the case of the two girls they had an excellent example of the disease developing in different stages. In the elder girl the pigment patches preceded the blue spots—i.e., the small

molluscous tumours. In the younger girl no molluscous tumours had at present appeared, but it was highly probable that they would develop later. Of special interest in the three cases was the relation of the condition to acute infections. The father stated that after an attack of pneumonia 13 years ago the molluscous tumours became more numerous, and during the stay of the two children in hospital for diphtheria the molluscous tumours in the case of the elder girl and the pigment spots in the younger girl increased in number and size. Probably the approach of puberty superadded to the recent infection would cause a further development of the lesions in the older girl. They would like to draw attention to the familial occurrence of so-called "bilious attacks." The occurrence of gastric disturbance had been noted in several cases of von Recklinghausen's disease, in some cases being associated with neuro-fibromata of the gastric wall. It was noteworthy that familial vomiting occurred in an incomplete series of cases of von Recklinghausen's disease reported by Dr. Parkes Weber. In view of the fact that attempts had been made to associate von Recklinghausen's disease with tuberculosis, they had found no evidence of tuberculosis either in the father or the children. Von Pirquet's reaction in the case of the children was negative. The doctrine of pluriglandular insufficiency was also inapplicable in their cases, as there were no mental or physical signs of disturbance of the glands of internal secretion. In conclusion, Dr. Rolleston stated that the blood examination made by Dr. MacNaughtan showed that the percentage of eosinophiles was normal, which in some cases of von Recklinghausen's disease had risen to 15 or 21 per cent.—Dr. H. D. ROLLESTON considered that the growth on the right half of the upper lip of the daughter aged 13 years was probably a plexiform neuroma, and Dr. F. PARKES WEBER thought also that it was a variety of that condition.—Dr. F. J. POYNTON described a case of Recklinghausen's disease in which excruciating pain was experienced, and asked if the cases shown were likely to develop painful tumours.—Dr. G. A. SUTHERLAND said that growths similar to that on the lip of the girl aged 13 years often occurred on the upper eyelid.—Dr. J. GALLOWAY described two cases in which surgical interference was tried for growth like that on the girl's lip—in the first success was not obtained and in the second no great result was achieved, but Mr. A. CARLESS narrated a case of similar growth on the chest which was successfully dealt with surgically.

Mr. C. C. CHOYCE showed two cases. The first was one of Symmetrical Gangrene of both legs, fingers of both hands, and nose. The patient, a marine coal-trimmer, aged 25 years, was a coloured native of Grenada, and had never before left the West Indies. He had never had any previous illness except gonorrhœa. No evidence could be obtained of past syphilis, Raynaud's phenomenon, or renal disease. Whilst in the Channel, on his first sea voyage, on a day that was not unusually cold, he suddenly noticed on coming on deck that his fingers and feet became very cold. He lost sensation in them, and then power of movement, and noticed that warming before the fire did not restore warmth and sensation. During that night his right foot was painful and became swollen, but he was able to do some of his work during the next day. During the next night his left foot also became swollen and painful; his fingers remained cold and numb, but were not painful. During these two days he passed black urine; since then it had been quite clear. There were no rigors, no lumbar pain, no vomiting, no diarrhœa, and no soreness of the gums or tongue. For some ten days he was invalided on his ship, suffering from thirst, acute pains in the legs and arms, and hyperæsthesia above the levels of anæsthesia. On arrival in the Thames he was sent into the Seamen's Hospital, Albert Dock. On admission his temperature was 101° F., but his general condition was fair. There was no evidence of a general endarteritis; there was no rash. The mouth was normal, except for dry sordes about the lips and a moist, slight fur on the tongue. The feet from the toes to 1½ inches above the ankles were glossy, black, swollen, and quite cold. There was no definite pitting on pressure; no pulsation could be made out. Deep pressure could be felt by the patient, but all sense of ordinary touch was lost, except at a ring, half an inch wide, at the upper limit of the gangrene, where there was marked hyperæsthesia. The patient could move the toes and ankles. The knee-jerks were present and normal. There was slight pain on deep pressure in the calves, but otherwise sensation above was normal. The fingers on both hands had the outer three fingers black and cold, with a ring of marked hyperæsthesia at the line of the metacarpo-phalangeal joints. The index fingers both showed black, cold, anæsthetic patches. The patient could move the fingers, although the terminal phalanges of the outer three fingers of each hand were dry and shrivelled. The nose showed at its tip a small gangrenous patch of about the size of a threepenny-piece. The ears were normal. The urine contained no albumin, blood, or sugar; its specific gravity was 1025. The stools were natural. The red blood corpuscles were 3,900,000 per cubic millimetre; the white blood corpuscles, 25,000 per cubic millimetre; and the hæmoglobin 70 per cent. Differential count: lymphocytes, 9 per cent.; large mononuclears, 5 per cent.; polymorphonuclears, 86 per cent. The limbs were thoroughly cleansed with acetone and treated aseptically. A well-marked ulcerating line of separation had formed 2 inches above each ankle. Both superficial and deep tissues appeared entirely dead. There had been some suppuration of the left leg, but the patient's general condition had steadily improved.

Mr. CHOYCE'S second case was one of Actinomycosis of the Abdominal Wall. The patient was a man, aged 49 years, upon whom he operated for appendicitic abscess in June of last year. The abscess was a thick-walled bilocular one which contained a concretion and about one pint of fæcal-smelling pus. The appendix was not readily found; the abscess was therefore drained and the appendix left for a future operation. The patient rapidly improved in health, and his wound healing well he left hospital in July, but stated that almost immediately after leaving the hospital he noticed some firm swelling in the region of the upper part of the left inguinal canal. That was slightly tender, but his general health was good. Nothing abnormal could be felt on the left side of the abdomen at the time of operation. The swelling on the left side of the abdomen gradually enlarged until, when seen again in September it extended from the left iliac spine to within 1 inch of the middle line, and from Poupart's ligament to within 3 inches of the costal margin above. It seemed to be confined to the abdominal wall, but was not moveable apart from the ilium. The abdomen moved freely on respiration. The tumour was tender on deep pressure, but was not painful. His temperature was normal, and the general health not markedly affected. A leucocyte count showed the presence of 10,000 per cubic millimetre. There was a history of syphilis ten years before. The patient was treated with large doses of potassium iodide. A fortnight later the tumour was larger, being more prominent anteriorly, and now extending up to within 1½ inches of the costal margin and to within ½ inch of the middle line. There was a reddened, slightly œdematous, area over the centre, the temperature was 101° F., and the leucocyte count now 20,000. An incision was made into the softened area, and an abscess cavity found containing a few drachms of pus and surrounded by dense masses of fibrous tissue. No actinomyces nor other organisms were found at this time. The abscess readily healed and the upper part of the mass diminished in size, but there remained a fibrous mass extending down behind the pubes. The temperature again became normal after the operation. At the beginning of November, as the tumour was increasing in size again, the old scar was excised with a small portion of the mass. In that were found a few fistulous tracks lined with granulations, and containing a slimy discharge in which were to be seen a few yellow granules. Those on examination proved to be composed of actinomyces. The incision carried through the mass showed that the peritoneum was free. The tumour was composed of fibrous tissue and a small round-celled infiltration. Since that date, under treatment of large doses of potassium iodide, the tumour had been decreasing in size, especially in its upper parts. It had, however, spread across to the right side of the abdomen. Now that part, too, was decreasing slowly.

Dr. GALLOWAY showed a case of Pulmonary Stenosis (Congenital)? The patient was a girl, aged 4½ years, who was sent to hospital on the discovery of abnormality of the heart. She had "bronchitis or pneumonia" when 4 months old; the medical man who attended her said that she had heart disease, which was probably congenital. She was

a fairly developed child and gave evidence of no serious defect on inspection. There was no cyanosis nor clubbing of the fingers, but she became breathless while at play, and perhaps a little cyanosed. There was a well-marked long-continued systolic murmur to be heard, its point of greatest intensity being at the base of the heart to the left of the sternum. The case was shown as one of congenital pulmonary stenosis or of patent ductus arteriosus.

Mr. SIDNEY A. BOYD showed a case of Hæmangioma of the Foot.

Dr. PARKES WEBER read a paper on a case of Congenital Pulmonary Stenosis, with special consideration of the nature of the secondary blood changes, which is published in full in this issue of THE LANCET, p. 150.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

The Relation of Public Health to Industrial Diseases.

A MEETING of this society was held on Jan. 13th, Dr. W. G. WILLOUGHBY, the President, being in the chair.

In the unavoidable absence of Dr. B. A. Whitelegge, a discussion upon the Relation of Public Health to Industrial Diseases was introduced by

Mr. W. F. DEARDEN, who said that the excessive mortality from certain diseases which afflicted workpeople engaged in particular industrial pursuits must point to the existence of some method of causation common to each industry concerned, whether or not this be directly or indirectly attributable to the trade process itself. There was one outside factor, however—viz., alcoholism—which appeared to pick out certain trades in the exercise of its deleterious effects. Workers subjected to excessive heat, as in glass-works and rubber-works, were, on account of the thirst created, very addicted to the use of alcohol and suffered accordingly. The alcoholic tendency of printers, hatters, and shoemakers was well known; waterproof-cloth spreaders, who were subjected to naphtha fumes, were very rapidly affected by alcohol, and it was suicidal for workers in lead to indulge in the habit. The direct influence of trade processes upon the production of disease was particularly marked in dusty occupations, and could be further illustrated by a reference to the dangerous trade processes scheduled in the Workmen's Compensation Act. One way in which industry affected public health was the production of a special liability to incapacity and death as the result of accident. In 1909 there were 39,966 accidents investigated by certifying factory surgeons, and of these 946 were fatal. The provisions of the Factory Act referring to safety came quite within the range of public health, including as they did the providing of means for escape from fire and the fencing of dangerous machinery. General sanitary requirements had reference to cleanliness, proper provision of closet accommodation, air-space, ventilation, temperature, and the drainage of floors where wet processes were carried on, though it appeared strange that there were no obligations as to efficient lighting. The investigations by certifying surgeons of cases of anthrax, plumbism, mercury, phosphorus, or arsenic poisoning contracted in a factory or workshop were of great value, and had resulted in a supply of information which had been of immense service in demonstrating the necessity for supervision of the processes. Although much had been done to improve the lot of the workers since the first Factory Act was passed over a hundred years ago, the factory sanitarian could not yet rest on his oars. On the other hand, the medical officer of health must recognise the influence on the general health of the community of the ill-effects which kept pace with, and which could not be dissociated from, industrial occupations.

Dr. EDWARD C. SEATON referred to the work of Dr. Whitelegge at the Home Office, and Dr. G. P. BATE considered that one of the most important reforms of recent years was the introduction of the conditional certificate of employment for children. Many children in an indifferent state of health were better if working at a suitable employment than running wild in the street. He pointed to the greater efficiency of inspectors of factories, who were now obliged to have a working knowledge of hygienic conditions.

Dr. A. GLEN PARK also spoke with approval of the conditional certificates, but regretted that he was not empowered as a certifying surgeon to make a subsequent examination of a child for the purpose of ascertaining whether conditions he had laid down, such as the provision of spectacles, had been carried out. There was no doubt that these certificates had encouraged certifying surgeons to allot suitable work to particular children.

Dr. ALFRED GREENWOOD would like to see a closer coöperation between medical officers of health and certifying surgeons, and suggested that the latter should have access to the results of the medical inspections of school children.

Mr. F. E. FREMANTLE advocated courses of popular instruction for workmen in the methods to be employed in preventing accidents, and suggested that models of machinery properly guarded should be placed in public museums.

Dr. J. H. KEAY supported this suggestion, and referred to the fact that children who had been examined by a school medical officer upon leaving school were frequently rejected by the certifying surgeon on account of defective eyesight.

Dr. E. L. COLLIS urged the importance of medical officers of health taking more interest in conditions of employment in special diseases, and referred with satisfaction to the work in this direction which had been done by Dr. Greenwood and Dr. H. Scurfield. He emphasised the necessity for investigating the invalidity of special industries and considered that danger in occupation was indicated more by invalidity than by mortality.

Mr. HERBERT JONES, Dr. A. H. BYGOTT, Dr. SIDNEY DAVIES, Dr. W. BUTLER, and the PRESIDENT also took part in the discussion.

SOCIETY FOR THE STUDY OF INEBRIETY.

The Influence of Parental Alcoholism on the Physique and Ability of Offspring.

THE discussion on this subject, which was held at the winter meeting of this society on Jan. 10th in the rooms of the Medical Society of London, was opened by Dr. T. B. HYSLOP, the President, in an address which we published last week. Dr. Hyslop, it will be seen, emphasised the fact that recent study of the question had greatly increased the sense of its complexity, allowing that he personally under advancing experience was more hesitant than formerly in connecting the mental defects and disorders noted in the offspring with the alcoholism of the parents. The real question to be answered, he said, was, Does parental alcoholism (of a pernicious kind)—apart from parental degeneracy, which, together with a tendency to alcoholism, is hereditable—influence the physique and ability of offspring at any age? He finished his address by saying that the conclusions arrived at by the Galton Laboratory School of Eugenics and their critics dealt with part only of the general question at issue, adding, "When further investigations shall have demonstrated the influence of parental alcoholism on parental degeneracy, and the combined influence on the physique and ability of offspring, we shall be better able to speak with authority for the guidance of the community."

Mrs. SCHARLIEB expressed her general concurrence with Dr. Hyslop's views, and urged the necessity of keeping an open mind on this question pending the result of fuller inquiry.

Sir VICTOR HORSLEY regretted that no representative of the Eugenics Laboratory had thought fit to attend the meeting, in view of Professor Karl Pearson's recent incursion into this question. He referred to the damaging criticisms to which Professor Pearson's figures had been subjected by the Cambridge economists, and mentioned that as the result of a careful scrutiny of the Edinburgh Charity Organisation Society's report, utilised in the Eugenics Laboratory inquiry, he hoped in a few days to draw public attention to other grave inaccuracies in Professor Pearson's statements.[1] He emphasised the fact that in the biometric data no evidence at all was offered to prove the alcoholism of the so-called alcoholic parents.

Dr. C. W. SALEEBY pointed out that Professor Pearson himself stated at the outset of his paper that there was a difference in the quality of the stock in the sober and in the drinking parents investigated, and remarked that this fact must vitiate any conclusion as to differences in the quality of the offspring. To test the effect of alcoholism the comparison

[1] See Brit. Med. Jour., Jan. 14th, p. 112.

should be between like stocks. He referred to Forel's views on blastophthoria, and suggested that there was ground for distinguishing an acute variety of this condition, as in cases where defect was supposed to depend on conception during drunkenness, and a chronic variety as in ordinary cases of chronic alcoholism. He indicated the parallel instances of degeneracy induced by such poisons as lead and arsenic. The further evidence needed with reference to the whole problem would be best supplied by experiments on the lower animals.

Dr. W. C. SULLIVAN remarked that in the really scientific literature of the subject the alcoholism which was asserted to act injuriously on the offspring was chronic alcoholism, and the belief in its detrimental action rested on medical observations in which it was definitely ascertained that this chronic intoxication really existed in the parent, and, further, that it existed before the conception of the child. Neither of these conditions was satisfied in the biometric data, where parents were described as alcoholic on no better evidence than the fact that social workers thought that "they were drinking more than was good for them or their homes." If the biometricians really believed that these alcoholic parents were suffering from chronic alcoholism, then they were asserting that three-fifths of the adult male population of Edinburgh, as shown by their random sample, were chronic alcoholics—a figure absurd on the face of it. The latest study of the biometricians on this question showed their want of first-hand acquaintance with the facts of alcoholism. Otherwise they would never have imagined that the inmates of inebriate reformatories were cases of "extreme alcoholism" or that the "intensity of their alcoholism" could be measured by the number of their convictions. This was due to the common illusion that drunkenness was the sole cause and true measure of alcoholism, whereas in fact the most alcoholic individuals amongst police-court cases, from which the so-called inebriates were drawn, were precisely those who had fewest convictions.

Dr. E. CLAUDE TAYLOR entered a protest against the suggestion in the biometric memoirs that inability to read or write was necessarily an evidence of mental deficiency which should render the individual so affected liable to be segregated for life.

Canon HORSLEY and Mr. THEODORE NEILD also took part in the discussion, and Dr. HYSLOP briefly replied.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

The Present Position of the Treatment of Plague.—Exhibition of Cases and Specimens.

A MEETING of this society was held on Jan. 11th, Dr. BYROM BRAMWELL, the President, being in the chair.

Dr. J. C. THOMSON read a paper entitled "The Present Position of the Treatment of Plague." He began by emphasising certain points in reference to the general management of a case of plague. While pneumonic cases, fortunately few in most epidemics, were virulently infectious through the emanations from the lungs, and must be dealt with in hospitals where due precautions against spread of the disease could be adequately provided, the results obtained by the Second Indian Plague Commission (1905–1907) showed that bubonic and septicæmic cases might be safely treated in the wards of ordinary hospitals, or in their own homes, provided that measures against rats and their fleas be taken. Combined methods were recommended for the rapid local extermination of possibly infected rats: traps with baits varying from day to day; poisoning with phosphorus, 2·5 per cent., or with barium carbonate, 25 per cent.; birdlime spread on boards and baited like the traps; and Danysz's virus. For the destruction of fleas a most efficient pulicide in combination with a germicide was a mixture of equal proportions of petrol and cyllin, diluted with water 1 in 200. Contacts—i.e., persons who might presumably have been exposed to the bites of fleas in the circumstances where infection of the patient occurred—should be inoculated with Haffkine's prophylactic, which has maintained its reputation as the safest and most efficient plague prophylactic, though a number of others have in recent years been prepared. As to the question of arrangements for disinfection during the illness, these may be approximately the same as in the case of enteric fever, except in cases of the pneumonic type, which being virulently infective from person to person required the most complete measures possible in this respect. Careful nursing of a case of plague was of the first importance. On account of the marked tendency to heart failure in this disease the recumbent position was essential so long as acute symptoms lasted, and in delirious patients, who were often wildly resistive, had not infrequently to be maintained by mechanical means. Points in reference to the nursing of plague were described, attention being specially directed to close observation of the state of the bladder. Food should be of a bland character, liquid, and given in small quantity frequently, but after acute symptoms subsided the diet might be rapidly improved. Water should be freely at disposal between the feeds, and should be frequently forced on acutely ill or delirious patients. The use of cardiac stimulants should be a routine practice in all cases of plague from the very first. Great prostration occurred as a rule within a few hours from the commencement of the illness, and in the earliest stages the debilitated heart needed support. Some of the symptoms that were apt to prove urgent in plague were next referred to—constipation, diarrhœa, high temperature, headache, delirium, insomnia, hæmorrhage—and the remedies found most useful in Dr. Thomson's experience in Hong-Kong were described. The treatment of the plague bubo had been the subject of much discussion, but the consensus of opinion was against excision of it. A large proportion of the buboes of patients who recover resolved without suppuration. Injections of antiseptics into the bubo were of no value. The point of inoculation of plague should always be looked for, and, if discovered, should be attacked vigorously. Unfortunately, it was rarely to be found, in this according with experimental results in the monkey. But occasionally there might be seen on a limb, below the bubo, a papule with an inflamed base and a clear vesicle at the top, the contents of the vesicle swarming with plague bacilli in pure culture. Destruction of this papule by a thorough deep cauterisation with carbolic acid after crucial incision was usually followed by abortion of the illness and a rapid recovery. The indolent ulcers that sometimes resulted from the buboes and the gangrenous skin areas, so-called carbuncles, occasionally met with, were manifestations of the general depression, and their treatment was on general principles. Convalescence from plague was usually slow, and the profound enfeeblement frequently resulting from the illness, with the mental and other sequelæ that sometimes occur, had to be dealt with as individual cases demanded. Dr. Thomson then proceeded to discuss a number of efforts made to find a specific remedy for plague in the directions of antiseptic drugs, serum-therapy, and organo-therapy. He described his own attempts to introduce carbolic acid into the tissues in sufficient quantity to delay the proliferation of the plague bacillus and allow the natural reaction against the organism time to assert itself. The use of 80 grains a day in a series of 204 cases seemed of little value, the plague hospital mortality being 76·5 per cent., only slightly less than the Hong-Kong average. But in another epidemic 144 grains daily in a series of 143 cases gave a mortality rate of only 36·4 per cent., this result, however, being obtained in the second half of the epidemic when the disease was normally less virulent. In the earlier half of the same epidemic oil of cinnamon had been used, but proved valueless. Further experience in Hong-Kong confirmed Dr. Thomson's belief that carbolic acid, while in no sense a specific remedy, was of undoubted value in the treatment of plague when given in massive doses. Trials made with other antiseptics had been disappointing. The position as regards the serum treatment of plague was pretty much that described in reference to antiseptics. Most unequal results had been obtained by different observers, among different races, in different epidemics. In comparing results it was important to note that European races showed a much larger proportion of recoveries, irrespective of treatment. In a series of 94 cases treated by Dr. Thomson in Hong-Kong with serum supplied by the Pasteur Institute in Paris the mortality was 85 per cent., and further trials gave scarcely better results. In Bombay Choksy, using the same serum, had in a series of 200 cases a mortality of 63·5 per cent., while in 200 control cases the mortality was 74 per cent., showing a gain of 10·5 per cent. On the other hand, in Oporto 140 cases were treated, with a mortality of only 14·78 per cent.; and in Brisbane

56 persons were treated, with a mortality of 44·6 per cent.; 39, with a mortality of 17·2 per cent.; and 65, with a mortality of 13·8 per cent. Various other serums tested by Choksy gave less favourable results than the Yersin-Roux serum of the Pasteur Institute in Paris. Indian experience generally seemed to indicate that case-mortality was but little affected by the use of any serum yet prepared; but the course of the illness was favourably influenced, especially if serum be used on the first day of the illness. As to organo-therapy, the use of adrenalin chloride was advocated by E. N. Thornton from experience in South Africa. It had previously been recommended in India by Bose, and Choksy had used it as a remedy for heart failure in plague. Thornton in a series of 50 cases had a mortality of 26 per cent.; in 936 cases previously recorded the mortality had been 37·4 per cent. The apparent advantage was therefore much the same as that obtained with serum in Bombay. Dr. Thomson summed up the present position of the treatment of plague as an exceedingly unsatisfactory one. In spite of earnest work devoted to it in all parts of the world during the recent pandemic their ability to deal clinically with this very fatal and perplexing disease had advanced but little since the question first in modern times became urgent in the Hong-Kong epidemic of 1894. They had still to place chief reliance on careful nursing and general management as for an acute asthenic fever. For the rest, where fresh serum was available it should be used, together with adrenalin, for advantages it certainly seemed to possess; where serum absolutely fresh was not to be had Dr. Thomson was still prepared to use carbolic acid, giving adrenalin along with it. And meanwhile the hope remained that sooner or later a serum might yet be evolved that would prove really efficient as a plague remedy.—Dr. WILLIAM RUSSELL said that it was most gratifying to the society to have had a communication of this nature from a gentleman who from his own practical experience had all the details both of the disease and of its remedies at his fingers' ends.—The PRESIDENT and Dr. FRANCIS D. BOYD also spoke.

Mr. CHARLES W. CATHCART showed: 1. A girl who showed the Advantage of Re-suture of the Facial Nerve when divided during removal of a parotid tumour. The tumour was deep-seated and the pes anserina was stretched over it. Division of the nerve was not recognised until the patient recovered from the anæsthetic condition. Next day Mr. Cathcart reopened the wound, and the surface was explored with electrodes in order to discover by twitchings of the muscles set up which were the distal extremities of the divided nerves. When found, these were united to the proximal ends, and almost complete recovery took place within three months. 2. A man with a Large Fistulous Opening just above the hyoid bone which was the result of an attempt at suicide by cutting the throat. It was the worst case of cut-throat which Mr. Cathcart had ever seen, the tongue having been almost completely separated from the hyoid bone. Sloughing of the wound took place and the large gap now present was the result. Mr. Cathcart demonstrated some interesting points as to the mode of formation of vowel-sounds, showing that these were really made above the larynx, probably in the situation of the back of the throat or tongue.

Mr. J. M. COTTERILL showed a unique specimen of a Diverticulum of the Cæcum which contained a very large concretion. The specimen was obtained from a man, aged 45 years, who suffered from pronounced toxæmia. The tumour lay rather behind the gall-bladder and was of the hardness of stone, giving on tapping a sound metallic almost in nature.

Dr. A. D. WEBSTER gave a demonstration as to the Value of Exercises on Health.

EDINBURGH OBSTETRICAL SOCIETY.

Landry's Paralysis during Pregnancy and the Puerperium.—Achondroplasia and Allied Variations.

A MEETING of this society was held on Jan. 11th, Dr. F. W. N. HAULTAIN, the President, being in the chair.

Dr. SAMUEL DAVIDSON (Kelso) sent a paper on a case of Landry's Paralysis occurring during Pregnancy and the Puerperium. The patient, who was now 41 years old, had had eight children, seven of whom were now living; she had not had any miscarriages. All her pregnancies and confinements had been normal till the seventh. Towards the end of her seventh pregnancy, about Dec. 15th, 1906, she began to complain of pains in her legs and feet and had considerable difficulty in walking; at the same time there was troublesome vomiting. She was delivered on Jan. 6th, 1907, of a stillborn child. The labour was easy and natural. Three days afterwards she could not move her legs at all and suffered with pains in them. During the next few days the muscles of the trunk and arms became progressively paralysed. She was quite helpless, unable to feed herself or turn in bed, could not move either hand or foot, and had wrist-drop and pointing of the toes. There was no paralysis of the muscles of deglutition or respiration. Retention of the urine occurred during the first week of illness and required the use of the catheter for four months. With the exception of the pain in the feet there was no disorder of the sensation; there were no bed-sores and no electrical changes in the muscles, and not much wasting. In May, 1907, improvement set in, first showing itself in the arms, but the finer movements in the fingers were a very long time in being established. The patient suffered from internal strabismus before her illness, but it became worse during her illness and improved as the paralysis passed off. The patient again became pregnant in September, 1907, and was delivered of a living healthy child in June, 1908. This pregnancy did not make the paralysis any worse, though it may have slightly retarded the progress of her recovery. About September, 1908, she began to walk with the aid of two sticks, and continued to require the help of one stick in walking till a few months ago. Now she had no pain but occasionally felt cramp in her arms and legs. There was apparently only one muscle now remaining paralysed, that being the extensor proprius hallucis on the right side. She was well nursed during her illness. The only medicinal treatment was the administration of arsenic and strychnine after the acute symptoms had passed off. Dr. Davidson was inclined to believe that the cause was probably one of the toxæmias of pregnancy. Only one reference was found, by F. Lenitton, "Landry's Paralysis Complicating Pregnancy," in the *North-Western Lancet*, Minneapolis, vol. xxii., p. 318 (1902).—Remarks were made on the paper by the PRESIDENT and Dr. J. W. BALLANTYNE.

Dr. D. BERRY HART read a paper on Achondroplasia and Allied Variations, illustrated by a series of lantern slides. It expressed the views contained in Dr. Hart's communication to THE LANCET of Jan. 14th, p. 124.—The paper was discussed by Dr. BALLANTYNE, Dr. A. H. F. BARBOUR, Dr. W. FORDYCE, Dr. J. W. SIMPSON, Dr. JAMES RITCHIE, and Dr. A. COWAN GUTHRIE.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Tumours of the Brain.

A MEETING of this section was held on Dec. 2nd, 1910, Mr. A. H. BENSON, the President, being in the chair.

Dr. T. G. MOORHEAD exhibited two specimens of Cerebral Tumour. The first was from a man, aged 42 years, who came to hospital some months ago complaining of pain in the head, of vomiting, and of difficulty in walking and standing. Five weeks previously he had fallen in the street and hurt his left knee. Previously he had not felt sick in any way. His special difficulty was in steering himself. There was no history of previous disease. He admitted having been a fairly heavy drinker, but nothing more. There was a slight increase of knee-jerks, no ankle clonus, and normal plantar reflexes. When standing he tended to fall backwards and to the right side. Nothing abnormal in the arms except a little incoördination on the right side. No disturbance of sensation. Mr. Benson found that the right optic nerve was in a state of extreme neuritis; no neuritis on the left side. The pupils reacted normally. No nystagmus. Owing to his mental state it was impossible to determine whether there was any hemiopia or not. No other cranial nerve involvement; no trophic or visceral symptoms. He was mentally dull and apathetic. The symptoms pointed to intracranial growth, and they trephined on the right side in the occipital region. Mr. Henry Moore

cut into the dura mater and displayed a cyst which contained about half an ounce of clear, yellowish fluid, epithelial in structure, and probably not malignant. Subsequently the patient improved very much. Symptoms of intracranial pressure again developed. Thinking the cyst might have filled up, they turned down the flap and put a drainage-tube into it. Fluid escaped, but not much. The patient was relieved, but again the symptoms of pressure returned, he became hyperæsthetic, and developed trophic lesions on his heels. They operated in the cerebellar region and found that the cyst did not originate there as they had suspected. The operation relieved the pressure, but the patient died in three or four weeks mainly from cardiac failure. They found in the frontal region of the brain a tumour of about the size of a walnut extending to the base of the frontal lobe; also a very small tumour in the temporal region. In the region of the operation was a definite hernial protrusion, an epithelial tumour apparently taking origin from the ependyma. It was apparently a compound malignant papilloma, corresponding to similar tumours found in the ovary. Ferrier had had a similar case, in which, with a frontal tumour, the symptoms were cerebellar. Dr. Moorhead had exhibited the specimen to emphasise the fact that cerebellar symptoms might be present in frontal tumours. Whether the frontal tumour was a development subsequent to the first operation was undetermined. The second specimen was from a man, aged 30 years, who noticed three weeks before admission that he was suffering from giddiness and failure of sight. Mr. Benson reported intense double optic neuritis, if anything more marked on the left side. There were increased knee-jerks on both sides, slight ankle clonus on the left side, normal plantar reflexes on both sides, marked nystagmus, slight diffused headache, and occasional vomiting. They determined to operate on the left side. Mr. Moore trephined and found evidence of great intracranial tension. The patient did not improve. They had no definite indication pointing to involvement of any other part of the brain. At the post-mortem examination a large tumour was found lying on top and slightly in front of the vermis of the cerebellum, compressing the region of the corpora quadrigemina. They had suspected that it was probably in the neighbourhood of the cerebellum. They had felt that the best thing was to relieve tension as rapidly as possible, and leave exploration for subsequent operation. In future cases of nystagmus, without other localising symptoms, he would be inclined to advise immediate exposure of the cerebellar region.

Dr. GEORGE PEACOCKE read notes on a case of Cerebellar Tumour. The patient, a female, aged 18 years, in December, 1909, had an attack of erythema nodosum; since then she had suffered on and off from headaches. In March, 1910, she had double pleurisy and was admitted to Adelaide Hospital on May 14th. Three weeks before admission she had been complaining of severe headaches, accompanied occasionally by vomiting; was constipated. After admission no headache for five days, then she awoke with severe headache. Pulse 40; pupils widely dilated, and respirations 46 and shallow. She was sweating profusely and was very restless. On May 21st Sir Henry Swanzy reported well-marked optic neuritis in each eye, especially the right. On May 31st her condition was: Knee-jerks well marked on both sides; no ankle clonus; plantar reflex normal; no difference in muscular power of legs; sensation normal; no incoördination; superficial reflexes normal; no loss of power in arms. Respirations between 30 and 40, irregular in time and depth. Eyes: Pupils equal, moderately dilated, respond to light and accommodation; slight nystagmus on extreme turning of eyes to the left, which also caused giddiness and nausea. Headache was paroxysmal, occipital and down the back of neck; most severe on left side. Unsteadiness of gait, tendency to fall backwards, but not to either side. Romberg's sign not present. Vomiting had no relation to food, and occurred frequently some days, others not at all. On June 2nd Mr. Gordon trephined over the left cerebellar lobe. The piece of bone removed was not replaced, and a hernia cerebri subsequently developed. The patient's condition did not materially improve and she gradually became less conscious—paralysis and epileptiform seizures appearing towards the end. She died about six months after the onset of definite brain symptoms. Professor Scott described the tumours found, one in each lateral lobe of the cerebellum. They seemed to have started in the neuroglia, and probably existed for some time as a glioma; later, from some reason, growth became more rapid and cellular, and they became indistinguishable from a sarcoma, which was almost typical at the margins of all three growths. This was associated with a formation of connective tissue, death of the neuroglia cells and some degeneration of the neuroglia fibrils, which with some altered blood from small hæmorrhages formed the sclerosed centre. The margins he looked on as a sarcoma, the particularly cellular type of the left tumour being caused by a very rapid growth, consequent on the altered physical conditions due to the trephining operation.

Dr. HAYES showed a specimen of Tumour of the Pituitary Body through the courtesy of Dr. L. Werner. The patient was an unmarried woman, aged 50 years, with some ocular disturbance. Her symptoms when she was X-rayed were: bitemporal hemianopia, both external and internal ophthalmoplegia, double optic atrophy, but no optic neuritis, no headache or vomiting. Towards the end of her illness she was slightly unsteady on getting out of bed. There were no symptoms suggestive of acromegaly or the typical changes in hands or feet. She was radiographed, and the negative showed considerable absorption of the pituitary fossa, absorption of the anterior clinoid process, as well as the posterior process, also absorption of the floor of the pituitary fossa. A negative showing a normal pituitary body was also exhibited and showed the body to be much smaller. Anterior to the tumour the base of the skull looked normal. He diagnosed tumour of the pituitary body. The patient became gradually worse and was totally blind before she died. She developed, finally, bulbar paralysis. Dr. O'Kelly removed the brain and a large tumour of the pituitary was found. As far as he knew it was the first case in the British Isles of which a diagnosis had been made from an X ray photograph, although it had been done on the continent. The exact histological nature of the case it was difficult to determine, but Professor E. J. McWeeney thought it was of an endothelial nature.—Dr. STOKES drew attention to a paper in the *Johns Hopkins Bulletin* by Harvey Cushing in which was a statement which the specimens put before them that evening had impressed upon him—namely, that brain tumours were extremely common. At the Johns Hopkins Hospital five years ago they had operated on six cases and in the last two years on 150. Five years ago they had not a single success. In the last two years they had actually cured 15 or 16 per cent., and had relieved and sent back to work about 60 per cent. of the remainder. They had about 10 per cent. of deaths soon after operation; not a single hernia cerebri or stitch abscess. Stress was laid on early diagnosis and on the point that the fields of vision for different colours were very early altered. From the number of cases which he had seen recently brain tumour was evidently increasing in Dublin.—Dr. K. E. L. G. GUNN said the fact that in two of the cases exhibited a tumour growth was found present at the necropsy at or close to the seat of the opening, which apparently was not there at the time of the operation, was suggestive that the injury might have something to do with the formation of such a growth.—Dr. A. R. PARSONS said that the specimens shown confirmed Horsley's views as to the value of the information to be obtained from destruction of the optic nerves, and he himself recently had a case of double optic neuritis which confirmed the view.—Dr. W. R. DAWSON said it had been held, though not absolutely proved, that the frontal lobes were the site of the moral faculties, and in many cases destruction or injury of the frontal lobe did interfere with the moral character. It was in the frontal region that chronic alcoholism was found to exert most of its deleterious influence. It was held some years ago that foreign bodies in the interior of the brain produced their effects by the extreme local anæmia caused. Where pressure was sudden or rapid the direct pressure itself might result in a seizure; but it was possible to explain epileptoid seizures by means of the extraordinary localised anæmia which they produced.—Dr. J. A. MATSON, Dr. R. J. ROWLETTE, Mr. F. K. CAHILL, Dr. O'FARRELL, and Dr. EUSTACE discussed the cases.—The PRESIDENT said that most of the cases showed very little alteration in the optic neuritis, but the operations were not performed until the cases were almost *in extremis*. Others with larger experience said that the optic neuritis did subside considerably after a decompression operation.

Dr. MOORHEAD, in reply, agreed with Dr. Stokes as to the frequency of intracranial tumours. He was, however, confident that even a larger percentage of cures than the *Johns Hopkins Bulletin* reported would be effected later on. He did not think the actual irritation likely to produce growth. Nothing very positive could be said on the mechanism by which tumours produced their effects, but it was natural to attribute some of the results to increased tension. He used to assume that it was anæmia that led to epileptiform seizures, but the direct effects of pressure lately had rather impressed him. Hemiplegia in relation to tumours of the Rolandic region was, he thought, common. As to the origin of the tumour in the first case it was impossible to get any information. The original cyst completely disappeared at the necropsy. There was no communication with any of the ventricles of the brain. With regard to urinary symptoms, he had found them put down in the literature as fairly constant, but without any explanation. The second tumour was a psammoma.—Dr. HAYES also replied.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—At a meeting of this society, held on Jan. 5th, Dr. F. Hinds, the President, being in the chair, Dr. D. G. Hall showed a man with a Malignant Growth at the back of the tongue. The patient, aged 46 years, had come as an outpatient to the hospital complaining of sore throat of two weeks' duration. There was a large excavated ulcer at the back of the mouth, which involved the base of the tongue, the soft palate, and the tonsil. It had a hard edge, and there was in the neck a mass of hard glands, which latter the patient had noticed for three months. It was too late to think of any surgical procedure. Dr. Hall remarked that this was a case, only too common, in which the patient discovered that he had cancer only when it was too late to operate.—Dr. L. A. Parry read, for Mr. J. Lawrence Hamilton, a short note on Dogs and Tuberculosis. He contended that where dogs had eaten or drunk tuberculous matter and subsequently scattered their dejecta wholesale on public footpaths this might possibly be one of the means by which tuberculous disease among men and other domesticated animals was propagated and diffused.—Mr. A. J. Martineau read notes of a case of Hæmorrhage from the Tonsil in a young married woman. She had an attack of acute follicular tonsillitis, which quite cleared up, but was followed by severe bleeding from the left tonsil, recurring the next day, though not so badly. On the following day another attack was so severe that she fainted. She was supposed to have lost at least two pints of blood. When the throat was examined the left tonsil was seen to project across the pharynx to meet the opposite tonsil, which was only moderately swollen. Slight bleeding was going on, the blood being rather bright and appearing to come from the upper and back part of the tonsil. The next day the tonsil was removed with the guillotine, and in doing this a cavity filled with blood-clot which had displaced the tonsil from its bed was exposed. The hæmorrhage did not recur. Mr. Martineau also read notes of a fatal case of Otitis, in which the question of delayed chloroform poisoning arose. The patient was a young woman, aged 18 years, who had a mild attack of measles, followed a few weeks later by an attack of otitis. Earache became severe, and Mr. Martineau decided to incise the membrane, and to follow this the next day by a radical mastoid operation, if the symptoms were not relieved. An anæsthetic was given and the membrane incised, but the next day she was still very ill, with a temperature of 103° F., restlessness, and delirium. A convulsion followed. Delayed chloroform poisoning was suspected. In favour of this view were great restlessness, sighing respiration, and a sweet odour of the breath. The urine, however, did not give any reaction for acetone. There was no localising symptom of meningitis. She was given bicarbonate of soda by the mouth and rectum, but in the night she had another convulsion, and her temperature was 106·4°. She was better next day and partly conscious. She gradually got worse mentally and talked incessantly, the back of the neck became stiff, and she had occasional squint. She passed into a state of coma and died a few days later. Mr. Martineau pointed out that if delayed chloroform poisoning was liable to be confused with meningitis another terror had been added to the diagnosis of this disease. He personally regarded the case as one of meningitis.—Dr. Hall and Dr. H. Galt read clinical and bacteriological notes on a recent series of cases of Enteric Fever admitted to the Sussex County Hospital. An attempt was made to show that the Widal reaction might have a prognostic as well as a diagnostic value. Of three cases that ended fatally, in two the reaction was negative throughout, although typical typhoid ulcers were found post mortem; in the third case the reaction was positive only the day before death. In one patient the presence of enteric fever was unsuspected until the admission of her brother to hospital. The symptoms had been masked by a coexistent chorea and acute endocarditis. The brother was sent into hospital as a case of perforation, but a white cell count showed only 2700, and he recovered without operation. On his discharge from hospital he was notified to the medical officer of health as a carrier, but no further examination or treatment was permitted by the parents. In one case the onset was sudden, with a temperature of 104°, sore-throat, and inflammation of the glands of the neck. There was a dull red rash over the neck and buttocks for the first two days, and later an eruption of rose spots. One of the fatal cases was the subject of mitral stenosis of old standing. Acute endocarditis supervened on the diseased valve. In this patient and one other the immediate cause of death was intestinal hæmorrhage.

Reviews and Notices of Books.

The Diseases of China, including Formosa and Korea. By W. HAMILTON JEFFERYS, A.M., M.D., Professor of Surgery, St. John's University, Shanghai; and JAMES L. MAXWELL, M.D. Lond., Medical Missionary in Formosa. With 5 coloured plates, 11 nosographical maps, and 352 illustrations. London: John Bale, Sons, and Danielsson, Limited. Pp. xvi.-720. Price 25s. net.

AMONGST the numerous treatises on tropical diseases that have enriched our language of late years no work on those of China has appeared. This omission the authors, who have worked in that country now for a long period of time, have rectified, and a perusal of their book will show how well they have done it. Their aim has been to present to medical men working in China a concise account of the special diseases that they will meet with in their own practice in that empire. The work is illustrated largely by photographs of disease conditions amongst the Chinese, the majority of which have never before been published. Again, special references to the modification of the tropical diseases met with, as brought about by the environment in China, are detailed, so that the student has under his hand a thoroughly trustworthy account of the morbific conditions met with in this interesting portion of the globe.

The work opens with the conditions of practice in China in which we read of its various modes, the Pharmacopœia of China, and its native surgery, amongst other points. Then follows an account of the nosography of the country, after which we come to the consideration of the various diseases. An excellent account is given of plague in all its respects. This article should be of special interest to us in England at the present moment, because the disease has now shown itself to us here, while there is an epidemic just declaring itself in China. In their remarks on enteric fever the authors show, as is the case in the Punjab, that the typical chart is the exception rather than the rule. They wisely lay down the necessity of examining the blood in all cases of fever in the tropics lasting for more than a day or two. Rose spots are usually absent in China, and here again there is a similarity to many cases occurring in India. In the medical treatment salol is stated to be the least harmful depressant amongst the antipyretics. The authors apparently have had no experience of that excellent drug—oil of turpentine—advocated by Sir Robert Simon of Birmingham. In the treatment of cholera, as regards prophylaxis, stress is laid upon the exclusion of flies from the house; we do not

find any mention of inoculation, which has proved so successful according to the results obtained by Haffkine in India. Nor does the method of treating the wells by permanganate of potassium, also of extreme advantage in India, appear to have come under the experience of the authors. Opium is not recommended, we are glad to see, to be given by the mouth; when given, it should be administered hypodermically, as morphia with atropine. With respect to the injection of saline solution, the researches of Rogers, with the good results obtained, are worthy of mention in a second edition. A very good recommendation is that of an ordinary quart size of Thermos flask for keeping the infusion at a constant temperature.

In their remarks on leprosy the authors do not seem, as has been the case with many others, to have found much benefit from nastin in the treatment of this affection. A very exhaustive chapter is accorded to the subject of malaria, this being, indeed, one of the best sections of the work. Then follow the subjects of blackwater fever, kala-azar, and yaws, concluding the section on the protozoal diseases. With regard to yaws we should like to have known the opinion of the authors concerning its supposed relationship to syphilis.

Next are considered the diseases caused by metazoal parasites. Here the student of tropical affections will find a very valuable exposition, as China is pre-eminently the country wherein these diseases are rife. Those due to the parasites of the circulatory system, of the lungs, and of the alimentary canal and liver all receive due attention. This section concludes with a list of the metazoal parasites found in China, illustrated by beautiful drawings, and from this list one can judge what an unfortunate wealth of material exists in this country. Accounts of the diseases of the alimentary canal, of the liver and spleen, and of the nervous system follow. In the treatment of sprue santonin is held to be the only drug worth serious consideration. This remedy has been tried at the Seamen's Hospital, Albert Docks, but without any good results. It would, however, appear that santonin is of use at the commencement of the affection, and this may account for its ill-success at our home institution, as the cases therein admitted have already had the disease for some period.

Amongst the remaining chapters of this valuable work is an excellent one on the undifferentiated fevers, in which are described glandular fever, seven-day fever, urticarial fever, double continued fever, and place fevers. The work concludes with the surgical affections of China and their operative treatment, and with some remarks on hospitals and hospital construction. To this is subjoined an excellent account of the laboratory methods employed for the examination of the blood and fæces.

In concluding this brief review we cordially congratulate the authors on their treatise, which must surely prove of exceptional value to the practitioner of medicine in China.

A Text-Book of General Bacteriology. By WILLIAM DODGE FROST, Associate Professor of Bacteriology in the University of Wisconsin; and EUGENE FRANKLIN M. CAMPBELL, Professor of Bacteriology in the Ohio State University. Illustrated. New York: The Macmillan Company. 1910. Pp. 340. Price 7*s.* net.

THE early text-books on bacteriology were able, owing to the limited extent of our knowledge, to take a general survey of the whole subject. The modern text-book has been forced, on account of the immense growth of the science, to treat it from the point of view of the specialist, whether he be pathologist, agriculturist, or technician. As a result, the general principles which underlie and link together the several special aspects from which bacteriology may be viewed are prone to be ignored by the student, and there can be no doubt that a book dealing with these general principles and written from the point of view of the biologist rather than from that of the pathologist or other specialist is wanted. It is to fill this want that the present book has been written, and it will no doubt prove very useful, as it presents knowledge acquired during recent years which is often crowded out of the special treatises. Such a work is not necessarily of an elementary character and certainly calls for much wide and accurate knowledge on the part of its writers. The headings of the various parts into which the book is divided—morphology, methods of study, taxonomy (that department of natural history which treats of the laws and principles of classification), general physiology, biology of special groups, and distribution—suffice to show the scope of the work.

It is not necessary to review in detail the several sections. The portions which deal with general physiology and the biology of special groups are perhaps the most important and best treated. There is occasionally some uncertainty as to the exact intention of the book; such uncertainty is seen in the section on the relation to environment, where a general discussion on disinfectants passes into a detailed description of the practical use of formaldehyde, though in another part of the book, quite properly, the student is referred for details as to culture media to a laboratory manual. Any author who wishes to write clearly and decidedly about the chemical products of micro-organisms must be dogmatic, so contradictory and scanty is our knowledge, and on this ground we cannot complain that the term "zymogenic" is arbitrarily restricted to those bacteria which produce amylolytic enzymes and the term "fermentation" to the decomposition of carbohydrates, but if a similar courage had been employed in dealing with putrefaction it would have tended to clearness. There is some repetition in different sections of the book and not infrequently on the same page. Possibly the repetition and the uncertainty of object may be due to the rather hasty preparation in book form of what appears to have been the subject-matter of a course of lectures. There is evidence of haste in the rather numerous slips and misprints.

The book will certainly prove of service, and the slight blemishes can be easily removed when a second edition is called for. The type and general appearance of the book are good.

Pellagra. By Dr. A. MARIE, Physician to the Asylums Department of the Seine; Director of the Laboratory of Pathological Psychology, École des Hautes Études, Paris; Editor-in-chief, *Archives de Neurologie.* Authorised translation from the French by C. H. LAVINDER, M.D., Passed Assistant Surgeon U.S. Public Health and Marine Hospital Service, and J. W. BABCOCK, M.D., Medical Superintendent, State Hospital for the Insane, Columbia, South Carolina. With 19 illustrations and 4 charts. Columbia: State Company Publishers. 1910. Pp. 434.

THE translators have added some useful chapters to the original work, have contributed some excellent illustrations of the skin lesions taken from photographs of patients in Cairo, Italy, Illinois, and South Carolina, and have provided two bibliographies, one of works written in English, and another, which does not profess to be complete, of contributions to the subject in foreign languages.

It is not too much to say that the work now before us is a very valuable aid to anyone wishing to obtain an elementary grasp of the subject. The list of American references shows very clearly the interest which has been awakened in pellagra in the United States since 1907, for four of the pages are sufficient to enumerate the publications in the English language dating from 1791 to 1906, while 13 are required for the remaining four years. One of the earliest references is to an article in THE LANCET which appeared 84 years ago.[1]

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[1] THE LANCET, 1826-7, vol. xi., pp. 476-478.

Dr. Marie's book appeared in Paris in 1908, and is abridged from Professor C. Lombroso's classical treatise on pellagra. The present work is prefaced by two introductory preludes by Lombroso, the latter of which was only received by the translators shortly before the death of the professor. The first mention of pellagra in American literature seems to have been in 1864, when Dr. J. P. Gray published a case occurring in a lunatic. Other cases were reported occasionally, but were not officially recognised until 1907, when an outbreak in an asylum was reported upon. Two pellagra conferences have been held in Columbia, and the most recent statistics show that in the United States pellagra exists, or is suspected to exist, in 33 States, that the number of cases in that country is about 3000, and that a total of 5000 individuals have become pellagrous during the last five years. Dr. Marie, a true disciple of Lombroso, devotes several pages to the discussion of spoiled maize as the cause of pellagra, but the translators, one of whom had the opportunity of coöperating with Dr. L. Sambon last year in Italy, when he was working there as the representative of the Pellagra Investigation Committee formed in London last year (*vide* THE LANCET, Feb. 10th, 1910, p. 451), are anxious that American readers should preserve a judicial mental attitude with regard to the etiology of the disease. They by no means accept the dominant dogmatism that spoiled corn is responsible for the causation of pellagra. The details of the theory that some unknown protozoon, insect-borne, probably by Simulium reptans, will be discovered to be the cause have been furnished by Dr. Sambon, and the translators have these in their mind, though sum up by saying that the belief that the disease is in some way connected with the use of corn as an article of food is so universal as to render its rejection well-nigh impossible except in the face of demonstrative proof to the contrary. "Sambon's idea," they say, "rests only on an argument by analogy, and is at present little more than a suggestion, but a highly interesting one. It may possibly lead to important developments at the hands of investigators." They quote the opinions of two entomologists in Washington, who believe that at present there is no apparent connexion in the Southern States between pellagra and the simulium. Dr. Marie, who has studied the disease in Italy and Egypt, finds that the psychic phenomena may include irritability, loss of memory, obstinate mutism, melancholia, systematised delusions, fleeting hallucinations, sitophobia, or hydromania. He believes in the existence of hereditary pellagra, of which he has seen instances in Italy. The chapters on pathological anatomy and treatment are mostly abridged from the writings of others.

This book ought to be in every medical library.

Studies in Immunity. By Professor PAUL EHRLICH, Privy Councillor and Director of the Royal Institute for Experimental Therapy, Frankfort, Germany; and his Collaborators. Collected and translated by Dr. CHARLES BOLDUAN, Bacteriologist, Research Laboratory, Department of Health, City of New York. Second edition, revised and enlarged. New York: John Wiley and Sons; London: Chapman and Hall, Limited. 1910. Pp. 712. Price $6.

THE appearance of a second edition of the translation of Ehrlich's "Studies in Immunity" is a welcome sign of the interest taken in this field of research—the most fascinating perhaps of modern developments of pathology. The theory put forward by Ehrlich to explain the phenomena still holds the field as the most intelligible account of this difficult subject; and while some observations—notably those with regard to the quantitative relations holding between the two bodies, amboceptor and complement, which take part in such reactions as hæmolysis—are difficult to reconcile with the doctrine, yet it has shown itself extraordinarily flexible and adaptable to a multitude of phenomena. It has proved above all, as we previously noted, a fertile hypothesis, suggesting new trains of experimental research and leading to extension of knowledge.

Most of the present book is the same as the former edition which we reviewed in the year 1906, and does not therefore need further notice here. Eight new chapters have, however, been added in this edition. The first of these, by Dr. Max Neisser, deals with the multiplicity of antibodies occurring in normal serum, the experimental evidence adduced being the action of normal rabbit serum on different bacteria and the possibility of removing the bodies active against any particular species by addition of the appropriate bacterium, while the potency against other germs is left intact. A second, by Dr. J. Morgenroth, is devoted to the binding of hæmolytic amboceptors, and shows that if corpuscles are sensitised with an excess of amboceptors, some of the latter may, on addition of more corpuscles, leave their first attachment and adhere to the latter. A chapter by Dr. Hans Sachs deals with the joint action of normal and immune amboceptors in hæmolysis and combats the views put forward by Bordet and Gay, and a second by the same writer discusses the power of normal serum to deflect complement, being also directed against Gay, who is stated to have been guilty of a grave experimental error. Dr. Sachs and Dr. J. Bauer write at considerable length on the joint action of several amboceptors in hæmolysis and their relation to the complements, and Dr. C. H. Browning treats of anti-amboceptors. Dr. R. Otto and Dr. Sachs discuss the dissociation of toxin and antitoxin, especially the curious "paradoxical phenomenon" discovered by Behring, but while confirming the truth of the observation in the case of several different toxins they fail to give an explanation.

The most interesting chapter of all to the general reader is perhaps the last, in which is contained Ehrlich's Nobel lecture on the Partial Functions of Cells. In it the author applies his "side-chain" hypothesis to explain certain phenomena of increased resistance offered by particular races of trypanosomes to the action of poisons. He suggests that immunity may result in some cases from disappearance of all the receptors capable of anchoring a poison. He also believes that the death of a parasite is brought about by the occupation of all its nutrient receptors by some antibody, so that it can no longer obtain nourishment from its surrounding medium. He states, finally, that by means of the remedy, arsenophenylglycin, it is possible to kill off any trypanosome in any animal, presumably including man—a triumph of therapeutics, if it is confirmed.

This edition has the great advantage over the former that it is furnished with an index. There are a good many misprints in the new chapters, such as "diagonosis," "sreum," "ilght," "stongly," and so forth; the curious idiom "(Gay) believes to have furnished ....." for "believes that he has furnished," occurs more than once. We do not recollect meeting it elsewhere in American books; it certainly is not English.

Otitic Cerebellar Abscess. By Dr. HEINRICH NEUMANN of Vienna. Translated by RICHARD LAKE, F.R.C.S. Eng. London: H. K. Lewis. 1909. Pp. 156. Price 4*s*.

THIS little monograph reaches that high standard which a work coming from the pen of so eminent a continental authority as Dr. Neumann would lead us to expect. After an opening section on statistics, which are very fully dealt with, comes one of the best in the book on etiology and pathological anatomy. The various paths of infection are discussed, and an excellent and up-to-date account is given of the bacteriology of cerebellar abscess, including the types

of abscesses resulting from different organisms. Symptomatology is admirably dealt with under the three headings of focal symptoms, general symptoms, and remote effects. In the first of these the question of nystagmus is extensively gone into, and a description is given of the results obtained on functional examination of the labyrinth on irrigation with hot and cold water in cases of labyrinthitis and cerebellar abscess. The next three sections describe the initial, manifest, and terminal stages of a case of cerebellar abscess.

Sections VII. and VIII. are devoted to diagnosis and differential diagnosis respectively. The great difficulty often experienced in diagnosing cerebellar abscess is pointed out, and stress is laid on the importance of performing lumbar puncture as a means of obtaining information as to the character of the cerebral changes. Dr. Neumann states that in his collection of 67 cases in which lumbar puncture was performed 42 gave positive and 25 negative results. Prognosis is shortly and efficiently dealt with. In the section on operation on cerebellar abscess Dr. Neumann commences by indicating the two methods of procedure—viz., operating from the skull and from the middle ear; the former he justly condemns, except in very urgent cases, on the grounds that the abscess is difficult to find and that the primary focus of suppuration is not extirpated. Various modifications for opening the posterior fossa are mentioned, and the method employed by the author is given at some length. We notice Dr. Neumann's advocacy of digital examination in cerebellar abscess, a method with which we do not think many English surgeons will agree. A short section on after-treatment follows, and the remaining 84 pages—more than half the book—are devoted to "Details of Cases," taken from various sources, continental, English, and American.

Mr. Lake is to be congratulated both on his choice of the work and the translation he has made. The book reads as if it were originally written in English.

Nutrition and Dietetics: a Manual for Students of Medicine, for Trained Nurses, and for Dietitians in Hospitals and other Institutions. By WINFIELD S. HALL, Ph.D., M.D., Professor of Physiology, Northwestern University Medical School, &c. London and New York: D. Appleton and Co. 1910. Pp. 315. Price 7*s.* 6*d.* net.

WE learn from the preface that this book embodies the author's teaching to nurses and students. The book is therefore elementary in character, but it is simply and clearly written and, as a rule, practical in the advice given. After a few pages on the needs of the body and on the natural foods prepared by nature for young animals, the writer proceeds to a definition of food and a classification of foods and food-stuffs. Next follows a section on digestion, assimilation, and excretion; then one on diet in health; and finally, a discussion of diet in disease in general and in special diseases in particular. In the appendices are given a few recipes for invalid preparations, and directions for some simple experiments to illustrate the principles involved in feeding. In the body of the book the influence of Chittenden's researches is manifest. We doubt whether students in this country would be content with the diet here prescribed for their needs: for breakfast a portion of oatmeal, with sugar and cream, two slices of toast, a cup of cereal coffee, and a bunch of grapes; for lunch soup, bread and butter, fruit, cake, and a glass of milk; for dinner meat and two vegetables, bread-and-butter, fruit, and rice pudding. Probably they would feel entitled to the "football player's" allowance, in which a couple of eggs are added to the above breakfast and two lamb chops to the lunch. It seems difficult for authors to maintain a scientific attitude in discussing the use of alcoholic beverages. Here we find beer and cider classed as "intoxicants" and put in a separate class from "beverages," such as tea and coffee, although the latter in excess may be toxic and the former in moderation do not intoxicate. Further, alcohol is termed a "pseudo-food," since, although it is capable of raising body-temperature by its combustion, its action as a vaso-dilatator causes loss of heat. Presumably alcohol *plus* a great coat would constitute a food.

Enzyklopädie der Mikroskopischen Technik. (*Encyclopædia of Microscopical Manipulation.*) Edited by Professor PAUL EHRLICH, Dr. RUDOLF KRAUSE, Professor MAX MOSSE, Professor HEINRICH ROSIN, and the late Professor KARL WEIGERT. Second edition. Berlin and Vienna: Urban und Schwarzenberg. 1910. Vol. I.: A–K, pp. 800, with 56 illustrations. Vol. II.: L–Z, pp. 680, with 111 illustrations. Price of the two volumes, 50 marks.

THE microscopical investigation of the structure and functions of animals and plants is a subject sufficiently extensive to fill many volumes, but by judicious selection the editors of the present work have given an adequate account of the most useful methods and appliances in about 1500 pages. Professor Ehrlich, his co-editors, and the numerous contributors whose names appear on the title-page have evidently spared no pains as authors and compilers, and it may be safely predicted that this reissue of their encyclopædia, embodying as it does the principal advances that have been made during the last seven years, will immediately become a standard work of reference.

Of the longer articles in the first volume mention may be made of those on Blood and Blood Parasites (46 pages). Celloidin and its Use for Embedding and other Purposes (28 pages), Chromic Acid and many other Chromium Compounds (18 pages), Experimental Embryology and Embryological Technique (97 pages), Stains and Staining (32 pages), Fixation (12 pages), Formaldehyde (14 pages), Freezing Methods (12 pages), Gold in Microscopy (19 pages), Golgi's Methods (32 pages), Skin (12 pages), Injection of Blood Vessels and Lymph Vessels (70 pages), and Bones, Teeth, and Cartilage (70 pages). In the second volume there are similarly elaborate separate articles on the Examination of Living Objects and Fresh Tissues; on Maceration; on Methylene Blue; on Micrometers, Micrometry, and Micrometer Screws; on Microphotography; on Microscopes; on Lamps; on Microspectroscopy; on Microtomes; on the Nervous System; on Osmiumtetroxide; on Paraffin and its Use for Embedding and other Purposes; on Plague; on the Projection of Microscopic Images; on Protozoa; on the Reconstruction of Specimens from Sections; on the Spirochæta of Syphilis; on the Tubercle Bacillus; on Artificial Digestion; on Widal's Reaction; on Worms; and on Drawing Microscopic Objects. These few selections from hundreds of articles, many of them necessarily short, will suffice to show the practical nature of the information conveyed in these two volumes.

Diagnosis and Treatment of Diseases of Women. By HARRY STURGEON CROSSEN. M.D., Professor of Clinical Gynæcology, Washington University, Gynæcologist to Washington University Hospital, and Director of the Gynæcological Clinic. Second edition, revised and enlarged. With 744 illustrations. London: George Keener and Co. 1910. Pp. 1025. Price 25*s.* net.

IN our notice of the first edition[1] we called attention to the many merits of this book. It deals almost entirely with diagnosis and treatment, and that it does this very fully is evident when we see that the total number of pages is 1025, an increase of over 200 on the first edition. The special feature of this work—namely, the illustrations—has been considerably added to in the present edition. They now number 744 and are excellently reproduced. The author has done his work well, if at somewhat too great

[1] THE LANCET May 2nd, 1908, p. 1281.

length, but there is a great deal of very useful information given, and several subjects are considered in a much fuller manner than is usual in the ordinary text-books of gynæcology.

Of special interest is the section on foreign bodies left in the abdomen, and the very useful method is adopted by Dr. Crossen of obviating such an accident by using long strips of gauze folded up and contained within a linen bag, from which they are withdrawn as required during the operation. The strips are of such a length that it is physically impossible for one to be left in the abdomen, and any such accident is further prevented by the extremity of each strip being fixed to the bottom of the linen bag containing it. For many years certain English gynæcologists have used with the same object gauze rolls too long to be lost in the abdomen if they are properly used, that is if they are gradually unrolled as each successive portion becomes soiled, being also never cut in any circumstances. But that it is possible to leave even a gauze roll 2 yards long and 6 inches wide in the abdomen if it is used improperly and introduced unrolled is unfortunately a fact. We think that Dr. Crossen's method of using a gauze bag to contain the rolls is a very good one and worthy of imitation. That the list he gives of foreign bodies left in the abdomen is far from complete we are sure, since without doubt the majority of these cases are never published.

The section dealing with medico-legal points in connexion with gynæcological cases has been amplified and a number of interesting cases are cited in which legal action has been taken. In selecting illustrations from other authors Dr. Crossen has not exercised the care he might in making sure that the legend is in all cases correct. For example, in Fig. 342, labelled mucous polypi of the cervix, four, and, we think, five, of the wax models do not represent mucous polypi at all. The common error of Gärtner for Gartner we notice in several places.

Physical Examination and Diagnostic Anatomy. By CHARLES B. SLADE, M.D., Chief of Clinic in General Medicine and Instructor in Physical Diagnosis in the University and Bellevue Hospital Medical College, New York. With 36 figures in the text. London and Philadelphia: W. B. Saunders Company. 1910. Pp. 146. Price 6*s.* net.

OF the 146 pages included in this work 10 at the end are devoted to the index and 10 at the beginning to the table of contents and the preface. Of the 36 illustrations in the text, some of which, by the way, are sadly out of drawing, several are so often repeated that in reality 25 different drawings alone exist, and one of these merely depicts a stethoscope. For the rest the text is well spaced and the type large and distinct, and therefore the subject matter of the book is not unduly full. Yet even considering the brevity of the book it conveys the impression, when its reading is completed, that there is a good deal less in it than, judging from the title, we might have expected to find.

The book is intended to be a text-book of physical examination, and a compendium of "diagnostic anatomy"—or the anatomy that should be at the command of the physician to aid him in carrying out the examination of his patients and determining the localisation of their diseases. In writing such a work it may be said with truth that the author designed to cater for a real need. A Medical Anatomy, as distinct from a Surgical Anatomy, is wanted; but the present volume does not appear to meet the want.

The author wastes space in introducing subjects of which he has nothing to tell the student save that they are not subjects to be learned from books, and even on points where book-teaching may be quite definite a certain obscurity of style makes his directions somewhat difficult to follow. For instance, the student is told concerning the use of the stethoscope that "there will be occasions when it is necessary to auscultate and a stethoscope is not at hand. The condition of the subject in some cases and in others the dictates of modesty will demand the use of the stethoscope through all of auscultation." Other passages could be quoted as, or even more, involved, and the description of the inspiratory sound is given in one complex sentence containing no less than 75 words. We do not want to be flippant, but the word-painting of the description is not half so effective in producing the impression of the inspiratory sound as is the result of the effort to read the sentence aloud. Such a phrase as "there is a crackling fremitus detected if we mash under our fingers soft tissues" seems to us to imply that the American use of words is not the same as ours; but the transatlantic origin of the book cannot excuse "calumnæ carnæ, and chordeæ tendineæ" (p. 100). Some other curious passages hardly come under the heading of being imperfect through mere complexity: for instance, of splashing sounds the author says: "They may therefore arise intrapleural or intrapulmonary, as well as in the hollow abdominal viscera."

LIBRARY TABLE.

Hypnotism and Treatment by Suggestion. By J. MILNE BRAMWELL, M.B., C.M.Edin. London: Cassell and Company, 1910. Pp. 216. Price 5*s.* net.—This is one of the volumes of Messrs. Cassell's "Modern Methods of Treatment" series, and it can confidently be recommended to all who in the course of their professional work are confronted with cases of functional nervous disease that seem to resist ordinary therapeutic measures. The whole book is pervaded by an atmosphere of common sense, preparing us for the good results claimed by the author and described by him in detail. He repeatedly and explicitly states that every stage of the so-called hypnotic condition is a conscious one, and that by hypnosis is not meant a condition resembling sleep, but one of increased suggestibility, and that the various phenomena have resulted from the suggestions made to the patient while in this state. Dr. Bramwell affirms that the whole object of suggestive treatment ought to be the development of the patient's own will power and of his control of his own organism. His long experience leads him to say that possibly the most important thing is not so much the method as the man behind the method, and it would be interesting if he, or someone of experience in these paths of therapeutics, would try to express scientifically just wherein the differences between the successful and the unsuccessful practitioner consist.

A Manual of Medical Exercises. By PERCY G. LEWIS, M.D. Brux., Honorary Medical Officer to the Victoria Hospital, and Surgeon to St. Andrew's Convalescent Home, Folkestone. Second edition. Illustrated. London: H. K. Lewis. 1910. Pp. 66. Price 1*s.* 6*d.*—The object of this little book is to form a kind of materia medica of exercises from which can be prescribed the special exercises each patient is required to perform by simply noting down the numbers instead of writing the exercise out in full. All the exercises detailed are meant to be performed with slowness, ease, and grace, without jerking or holding the breath. No exercise is to be continued after the first feeling of fatigue is induced. The book is divided into four parts: Part I. deals with home exercises; Part II. comprises exercises for home or gymnasium; Part III., gymnasium exercises alone; and Part IV., respiratory exercises. From increased experience, the author states he is sure that those exercises are the most useful which are performed without apparatus. This book should prove of service to practitioners who find it necessary to prescribe modified courses of physical exercises for patients the tone of whose muscles is at fault and requires

some stimulus to increase the circulation of both blood and lymph.

The History of St. George's Hospital. By GEORGE C. PEACHEY. Part II. London: John Bale, Sons, and Danielsson, Limited. 1910. Price 2*s.* 6*d.* net.—This is the second instalment of Mr. Peachey's interesting history of St. George's Hospital, and includes notes upon life in London during the eighteenth century, especially in its bearing on medicine. It commences with a description of London in 1731, a time when English physicians (of whom it was said that they seldom got their bread until they had no teeth with which to eat it) were to be found at Batson's or Child's Coffee House, usually in the morning. The chapter closes with an account of the conversion of Lanesborough House into St. George's Hospital. Lanesborough House, the home of the Lane family, was situated at the corner of the Green Park and Hyde Park, but the neighbourhood, of course, wore a very different aspect from that which it wears to-day, and the author's brief but vivid description of the London of Addison and Steele, Smollett, Fielding, and Hogarth, as well as his incidental references to London of the seventeenth century, form not the least interesting part of the chapter. Included in this part is a reproduction of an engraving of St. George's Hospital by Isaac Watt, about 1736, and a plan of Lanesborough House as it appeared when taken over by the trustees for the hospital in 1733. There is also a pedigree of the Lane family. Publications of this kind do not always receive the support which they deserve, and in the present case it is possible that the medical as well as the lay public may not fully appreciate the extreme interest of the book. It certainly should appeal to all past and present students of St. George's Hospital, but the medical profession generally might like to learn the history of an institution associated for years with men like John Hunter, Edward Jenner, Mathew Baillie, Benjamin Brodie, and Thomas Young.

Medical Guide to German, Austrian, and Swiss Watering Places. Edited by HAROLD MORRÉ, M.D. Second edition. Berlin: Eugen Schachtel. 1910. Pp. 153. Price 2*s.* 6*d.*—This book contains a description of the principal continental watering-places, with copious illustrations; also an index of morbid conditions that form indications for certain resorts. It may aid the practitioner in selecting a proper destination for those of his patients who are convinced that a foreign excursion is necessary for the restoration of their health and are fortunately able to afford one.

Vaccine Therapy: Its Administration, Value, and Limitations. London: Longmans, Green, and Co. 1910. Pp. 216. Price 4*s.* 6*d.*—This is a reprint in book form from the Proceedings of the Royal Society of Medicine of the discussion on Vaccine Therapy which began with an address by Sir Almroth Wright on May 23rd, 1910, and occupied six successive meetings. Sir Almroth Wright's address was published in full in THE LANCET of Sept. 23rd, together with an abstract of the discussion. The republication of the papers in book form will be very useful to those practitioners who desire to render themselves conversant with the present status of vaccine therapy from many view points.

"*Medicus*," *Guide Annuaire des Étudiants et des Praticiens (Médecine, Chirurgie, Odontologie, et Pharmacie).* Par A. ROUZAUD. Préface de M. le Dr. YVON. Paris: 41, Rue des Écoles. Pp. cxliv.-1440. Price 5 fr. (4*s.* 2*d.*)—This book is a continuation of a series of annual guide-books which have appeared for many years. The subject-matter is carefully classified into five parts: (1) Matters relating to the teaching of medicine, pharmacy, and odontology, with programmes of the various competitions for the posts of externe, interne, &c.; the entrance requirements for the military, naval, and colonial medical services; a list of the hospitals, and a plan of the "Assistance Publique" of Paris, insane asylums, learned societies, students' societies, &c.; (2) lists of the faculties of the provincial and colonial medical schools; (3) a directory, both alphabetical and local, of physicians, surgeon-dentists, dentists, and pharmacists; (4) a list of the faculties of the more important foreign medical schools, which is followed by a dictionary of legal medicine by M. Marcel Petit, of the Paris Court of Appeals; and (5) a collection of laws, decrees, and ordinances relating to the practice of medicine and pharmacy, the protection of the public health, sanitary police, public assistance, occupation accidents, health resorts, mineral springs, &c. The book undoubtedly contains much valuable reference matter, though in the section on foreign medical schools we note a number of important omissions as regards Great Britain and the United States. Accompanying the volume is a paper-bound engagement book, "Agenda de Medicus," for the period between Oct. 1st, 1910, and Oct. 1st, 1911, each day having lines for half-hour periods from 8 A.M. to 6.30 P.M.

Medical Etiquette. By Dr. GEORGE SURBLED, Professor of Deontology at the Paris Post-Graduate Medical School. Translated from the second French edition by W. P. GRANT, M.B., Ch.B. Vict., M.R.C.S. Eng., L.R.C.P. Lond. With a preface by Sir DYCE DUCKWORTH, Bart., M.D., LL.D. London: Sherratt and Hughes. 1910. Price 5*s.* net.—We agree with Sir Dyce Duckworth's words in his preface that "this work is certainly remarkable as an exposition of the views of an experienced, right-minded physician and Christian," and we join in his recommendation of its study to the medical profession. What is right conduct in one country is right conduct in another, and the fact that the rules of deontology which are sound for France should be sound also for Great Britain is sufficient proof that medical etiquette is not represented by abstruse rules, but is in truth the plan for a broad kind of professional conduct founded on the great maxim of Christianity, "Ye shall do unto others as ye would they should do unto you."

Human Anatomical Model (Female). A Life size Reproduction of the Dissections of the Various Parts of the Human Body. With Descriptive Index by FREDERICK NORMAN, F.R.C.S. Eng., and W. G. STONE, M.D. Oxon., F.R.C.S. Eng. London: Gresham Publishing Co. Price £2 5*s.*—On two stout folding cardboards opening lengthwise is displayed the full-sized figure of a woman. Layer by layer the coverings are turned aside, showing first the superficial, then the deep muscular layers. The internal organs of the abdominal and thoracic cavities in like manner can be turned back, displaying their relations one to another, until finally the skeleton is reached. There is also a detachable portion of the lower abdomen and pelvis in which are displayed the interior of the uterus and its contents at varying stages of pregnancy. The descriptive index is very clear as regards identifying the various organs as they come into view, and the model will prove of assistance to senior students and practitioners who may have occasion to review their anatomy, especially in regard to anatomical relations. It would have been more valuable for beginners if the converse process had been added, by making an alphabetical index of all the parts shown with a reference to the different plates in which they could be found, and perhaps in any further issue of a useful publication the possibility of this addition will be considered.

Stocks and Shares. By HARTLEY WITHERS. London: Smith, Elder, and Co. 1910. Pp. 371. Price 7*s.* 6*d.*—Mr. Hartley Withers, an authority on this subject, places on his title page a quotation from "An Essay on Public Credit," written 200 years ago—"I am to speak of what all People are busie about, but not one in Forty understands." It is widely said, and we have reason to believe that there is a good deal of truth in the remark, that there is no class of the community less able to deal advantageously with their savings and

incomes than medical men. As a class medical men are not rich, those with the largest incomes having often unduly heavy expenses as well as very little leisure to think of their own concerns, so that it may be replied to those who criticise our unbusinesslike methods with regard to our savings, that the savings themselves do not in the aggregate amount to much. But to read such a book as this is to learn that the art of sound investing is not beyond either those whose time is very much occupied or those who have little to invest.

The Chained Titan. By W. G. HOLE. London: G. Bell and Sons. 1910. Pp. 104. Price 4*s.* 6*d.* net.—Mr. W. G. Hole has produced in the "Chained Titan" what to our mind is a rather remarkable poem. A modern pilgrim, a social worker at home, who is familiar with all the terrible defaults of our present economic conditions, finds himself at a little seaport on the Greek coast and rows out alone to watch the sunset. He is conducted by Hermes to a valley where Chaos is discoursing on the signs of the times to the other gods, finding the resistance of man to the forces of pestilence, plague, and famine growing stronger and the influence of the gods waning. The pilgrim then comes across Prometheus undergoing his perpetual torture and the chained Titan protests against the way in which mundane affairs, as he has learned of them, are conducted He himself had suffered in order to place in the hands of men the opportunities of advancing in the arts of civilisation, but it seemed that as men grew powerful against the paralysing influences of the old gods they became tyrants themselves, the strong grinding down the weak. The representatives of those on whose behalf he speaks debate the subject before him, when Chaos returns; but at this moment the "Eternal Sacrifice" is revealed, and as the pilgrim descends the mountains he passes through forests which thrill with the mysteries of birth and growth. This is a mere outline, mainly in the author's own words, of the tremendous subject-matter of this short poem. In the main it is written in dignified blank verse, but the strand is broken with many graceful stanzas. The book has a peculiar interest to us because it is dedicated to the memory of our late assistant editor, Dr. J. Bart Rous, of whose "rare insight as a critic and perfect loyalty as a friend" the author speaks in acknowledgment of a personal debt.

JOURNALS AND MAGAZINES.

The British Journal of Tuberculosis. Edited by T. N. KELYNACK, M.D. Vict. Vol. V., No. 1, January. London: Baillière, Tindall, and Cox. Single copies, 1*s.* 6*d.*; annual subscription, 5*s.* post free.—This number contains the following articles: 1. A Popular Crusade against Consumption, by Mr. C. H. Garland, giving a brief account of the special appeal of the National Association for the Prevention of Consumption. 2. The Conquest of Tuberculosis, by Dr. David B. Lees, in which reference is made to the method of treatment by inhalation recommended by him. 3. Directions for Living and Sleeping in the Open Air, by Dr. Thomas Spees Carrington, a paper which is full of useful practical hints. 4. Local Effort in the Anti-tuberculosis Campaign, by Mr. Reginald E. Stidolph, giving a short account of the methods employed in the town of Brooklyn to arouse interest in this question by advertising and other means. 5. Some Effects of the Constant Current upon Tubercle Bacilli in Fluids, by Dr. Charles Russ. 6. Impressions of the International Tuberculosis Conference, Brussels, 1910, by Dr. Nathan Raw. Two "critical reviews" are also included, one by Dr. F. Rufenacht Walters on Sanatorium Treatment in Pulmonary Tuberculosis, and another by Dr. Hugh A. Macewen on Milk and Tuberculosis, as well as some general information in regard to institutions for the tuberculous, books, preparations, and appliances.

New Inventions.

A PELVIC LEVEL FOR COMPARING THE STANDING HEIGHT OF THE LEGS IN LATERAL CURVATURE OF THE SPINE, ETC.

IN examining a case of lateral curvature of the spine it is important that the standing height of the legs shall be compared. For this purpose the instrument figured here, which has been made to my design by Messrs. Hawksley and Son, 357, Oxford-street, London, W., is simple in use and accurate in its results. It consists

of a thin plate of hard wood, 15 inches long, 2 inches deep in the middle, and tapering to 1 inch at either end, curved to suit the prominence of the abdomen, and having a straight upper edge. It is fitted at the centre of its convex face with a small platform terminating in a convenient handle and bearing a spirit-level. To use the apparatus the patient, with boots off and with the hips exposed, is required to stand erect. A dot is placed over each anterior superior iliac spine with a dermatographic pencil. The instrument is then applied so that the upper edge passes though both dots. If the spirit-level then indicates horizontal the two legs are equal as regards their standing height. If it does not indicate horizontal then slabs of wood of known thickness are placed beneath the foot of the shorter side until the horizontal is gained. The sum of the slabs used gives the difference between the two legs. This method of measurement assumes only one thing—viz., that the pelvis is symmetrical as regards the height of the anterior superior iliac spine above the acetabulum. Any vertical measurement taken from the anterior superior spines themselves with the patient standing on unequal legs requires correction by a very complex and constantly varying formula before it can be accepted as exact, because in the first place, the distance between the anterior superior spines is greater than the distance between the mid points of the heads of the femora (9½ inches to 6½ inches, average measurements), and therefore any difference in the levels of the latter will be exaggerated in the levels of the former; and, in the second place, when the pelvis is tilted sideways the anterior superior spines move up or down, as the case may be, not in straight lines but in curves, owing to the ball-and-socket action of the hip-joint. The usual method of building up the short leg by placing slabs beneath the foot overcomes these objections, and the use of the pelvic level here described does away with the uncertainty of trusting to the eye in judging the restoration of the pelvis to the horizontal. J. S. KELLETT SMITH, F.R.C.S. Eng.

Eastbourne.

COMBINED TARSAL CYST KNIFE AND CURETTE.

THE removal of tarsal cysts (chalazia) from the eyelids is an operation of some difficulty on account of the smallness of the hold on the eyelids and the slipperiness which ensues when bleeding commences. The difficulty is not lessened by having to change instruments, one to incise and another to scrape out the cyst. To obviate the disadvantages of two independent instruments, I have devised a combination in which both are contained in a metal tube. The knife blade is wedge-shaped, thus enabling the cyst to be opened by one

cut, and instead of the usual sharp spoon, which becomes blocked, a sharp ring curette is used. As one instrument is protruded from the tube the other is withdrawn into it, thus tending to prevent injury either to the operator or the patient. The action can be controlled by the fingers of one hand.

Messrs. Weiss of Oxford-street, London, W., have embodied my ideas in a perfectly satisfactory manner, and the instrument can be obtained from them at a moderate cost.

Manchester. A. A. BRADBURNE, F.R.C.S. Edin.

THE LANCET.

LONDON: SATURDAY, JANUARY 21, 1911.

The Evolution of the Medical Officer of Health.

THE public health service of Great Britain has afforded an example of sanitary administration which has been closely followed by foreign nations and by our own colonies and dependencies, and although there are not wanting critics who are opposed to local government in sanitary matters, and who would have us follow methods more suitable to the conditions of our Indian Empire, the Local Government Board is not likely to be deflected from its ideals of local administration. We may be well resolved to resist the needless encroachments of bureaucracy, and yet perceive that public health conditions cannot always await a settlement by a Parliament entangled in party warfare. The path towards the attainment of sanitary ideals is a long and difficult one, and it is mainly by periodic stimuli put forth by the central body that advances in detailed local administration are made, more particularly in the case of the smaller urban districts and in the rural districts where, as a rule, part-time medical officers are still in power. These part-time officers have in very many instances done excellent work, and a great deal of the sanitary progress which has been effected is in large part due to their efforts which, it may be added, have been altogether out of proportion to the paltry recompense which they have received. But these part-time officers would be, some of them, the first to admit that there are many drawbacks to their employment, and it is clear by an Order recently issued that the Local Government Board considers these drawbacks to outweigh the advantages obtained by leaving the preventive service in the hands of the general practitioner. The future of the general practitioner, which has been of late seriously threatened by so many new social factors, may not at first sight seem to be improved by the new Order, but having regard to the miserable stipends received by so many of the part-time medical officers the pecuniary damage will not perhaps be very great. Moreover, the process of conversion will take very many years to accomplish, so much so that many men of 40 who are now holding part-time appointments may die, still holding them, at a ripe old age. The Order must be taken as little other than an indication of the tendency of central administration. Nor, as we view it, will there be any loss of prestige to the medical profession, but rather the reverse, for at present many who hold these appointments, owing to the insecurity of their tenure and the conditions of their service, do not regard them with much complacency. The loss of emolument to those in general practice will be to a great extent made up in two ways: firstly, those who would be their rivals in general practice by taking the official appointments will leave the field for such practice more open; and secondly, those holding the official appointments, not being their rivals in practice, can be consulted in diagnosis and kept informed on sanitary matters without risk of professional friction.

It must be remembered that the appointment of a whole-time medical officer of health for a very large combined district is not always a success. This fact is evidently appreciated in a Memorandum which has been issued by the Local Government Board in connexion with the new Order. This Order and Memorandum combined contain some very important and far-reaching modifications, the full force of which is only apparent to those who are sufficiently familiar with the subject to enable them to read between the lines. Although the Local Government Board is strongly opposed to the medical officer of health being at the same time a general practitioner, it is clearly in favour, at any rate at present, of the medical officer of health embracing as many appointments of a public nature as will enable him to devote his whole time to public work of one or another description. Indeed, it seems within the realms of possibility that the not far distant future may see a medical officer of health for a relatively small area possessed of a diploma of public health and holding, in addition, one or another, or conceivably all, of the following appointments: school medical officer, superintendent of the isolation hospital, certifying factory surgeon, police surgeon, public vaccinator, district medical officer, and medical officer of the workhouse. Moreover, he may, if qualified to do so, act as consultant in infectious diseases and as the bacteriologist to his own and perhaps other local authorities. It is evidently by some such means as these that relatively small areas will in the future provide themselves with a medical officer of health who shall not engage in private practice, and it will be found by an examination of local appointments how easily a sum of money sufficient to support a whole-time officer may be procured by the fusion of appointments in the sense here contemplated. The coming into operation of such a revolution must be spread over many years, and should not be regarded as spoliation of the general practitioner so much as a rearrangement of duties among medical men whereby there will be more who receive public salaries and less who practise under existing conditions. The particular risk which the medical profession runs at the present moment is that insufficient salaries should be offered and accepted for the discharge of amalgamated duties.

No statement or suggestion is ventured upon in the circular before us as to what the Local Government Board would be likely to regard as a minimum salary, but as the observation is made that the medical officer of health should not be placed in a position of inferiority in the matter of salary to other medical men in the district, it is difficult to see how anything under £500 per annum net as an initial salary could be entertained, the expenses of administration being defrayed. We are glad to see, too, that the Board definitely expresses the opinion that it is "not sufficient merely that a medical man is found who is prepared to accept the salary offered, it is more important that the

salary should be such that it will be worth the while of a capable man to accept it, and to give a sufficient amount of time to his duties." Some important modifications are made by the Order just issued, the provisions of which are already in force as regards the duties of medical officers of health. In the first place, it is definitely laid down that the medical officer of health cannot be expected, as part of his duties, to make a quantitative examination of water, although he may well employ certain qualitative tests for his own guidance. If he is competent to make the former examination the local authority may arrange with him for such purposes. In future, rural as well as urban district councils are to give notice of appointments by advertisement only, although, if the Board sees fit in any special case, it may dispense with this notice. Once appointed for a specified term, this officer, at the expiration of such term, will continue to hold office from year to year, and no further approval by the Board is required unless the terms of the appointment are altered. Moreover, a district council may at any time during the period of limited appointment change such appointment into one without limit of time, all of which provisions mean, of course, that an effort is being made, and that a very praiseworthy one, to bring about greater security of tenure than now obtains. The additions which are made to the duties of the medical officer of health by the new Order are not very onerous except in the event of his annual report not being printed. It is now laid down that this officer shall submit three copies of his annual report to the Local Government Board as well as a copy to his own local authority and to the county council or councils with whom he may be in official relation. Having regard to the very arduous duty of possibly writing out six copies of his annual report, we can well understand the anxiety of the Local Government Board that the local authority should cause the annual report to be printed in order, so that, amongst other things, the district councillors and other persons interested may have an opportunity of perusing it. Another additional duty is the weekly transmission to the Local Government Board, and to the medical officer of health of the county, of a list of cases of infectious diseases notified in his district. He is also required to notify at once to the Local Government Board any case of plague, cholera, or small-pox which may be brought to his notice. The relations of the sanitary inspector to the medical officer of health do not always appear to be quite properly recognised, and consequently the new Order has been modified in such a fashion as to emphasise the fact that the inspector should, as a rule, act under the general supervision of the medical officer of health, who "must be regarded as the head of the public health department of the council."

The Accounts of Medical Men.

A MEETING of the Hunterian Society is announced to be held at the London Institution, in Finsbury Circus, on JAN. 25th, when a paper on Medical Fees will be read by *Dr.* F. J. SMITH. The subject, which has often been debated, has once more been brought to the public attention through the issue in the *Times* of Jan. 11th of a letter signed "Senior," in which complaint is made both of the exorbitance of medical charges and of the fact that medical men do not follow the customs of the commercial world by rendering their accounts in detail. "Senior," it will be seen, was making, therefore, a double-barrelled complaint, the first, that of exorbitance, being directed against operating surgeons mainly; and the second, that of deficient business habits, being directed against the general practitioner. "Senior's" letter has led to an interesting correspondence in the course of which there were advanced various reasons in support both of the present standard of fees and of the custom of rendering only a general statement in connexion with charges for professional services, and a leading article in the *Times* of Jan. 17th summed up the situation from the public point of view with great fairness as well as wit.

In all medical affairs there is a public side, and if medical men are prone sometimes to forget this fact, the public is at least equally oblivious of it. But the double interests involved in such a matter as medical charges are too obvious to escape the attention of anyone, and in our opinion it would be a good thing if some of those well-disposed, if critical, laymen who, like "Senior," are unable to understand why there should be any difference between the accounts of a medical man and those of an ordinary commercial firm or of their legal adviser, could attend the debate at the Hunterian Society and explain their difficulties. At such a general discussion the point of view of the public ought to, and would, we feel sure, receive sympathetic attention, and each party to an old quarrel would have details put before them in a new light and in such a way that differences of opinion could be much adjusted. There can be little doubt that if the custom of keeping strict accounts in a business-like manner, rendering them in detail, could be generally adopted by medical practitioners it would prove of great financial advantage to the medical profession, for it would enable the general practitioner to claim many a fee for individual items of special service such as laboratory investigations, letters written, telephone calls answered, and what not, which under the present "lump sum" method are certainly lost to him. Such things are never overlooked in the business-like accounts of the legal adviser, who is held up to us as a model, but we are not certain that the receipt of what an American would call an "itemised" lawyer's bill is greeted with enthusiasm by the public. It is more usual for the public, angrily and unfairly, to call the minor charges extortionate. Most commercial men fail to grasp the crux of the situation, which is that medical aid is in no sense a commodity that is sold but a service that is rendered; a service, the value of which is not fixed or even fixable, but is dependent on many factors—the financial status of the person to whom it is rendered, the professional status of the person by whom it is rendered, the nature of the service itself, and the circumstances and conditions surrounding its rendering. In the business world, and also even in the professional field occupied by the lawyer, the greater part of the work is done in a fixed locality—the shop or office—where a staff of minor assistants is kept, who take cognisance of everything sold or every item of service rendered, duly recording it for the future accounting, while performing all the clerical labour entailed in sending out accounts. These clerks and assistants form part of the business establishment, and the cost of

maintaining them forms part of the consideration on which the scale of charges is based. Without their aid no business man could carry on a business of any magnitude, even if all his work continued to be done in his office. How much more impossible, then, would it be if he personally had to attend to every detail of his work, to call in person upon customers or clients at any hour of the day or night, whenever they wished to make a purchase or to propound a question, and to keep a strict record in a clear businesslike fashion of every detail involved, while no limit was placed to his business hours whereby he could make sure of uninterrupted leisure in which to post up his books.

The question of the magnitude of medical fees is directly linked with the other. The business man, as his business expenses and the cost of apparatus and raw material increase, raises his prices in proportion. Yet the business expenses of the medical practitioner have risen of recent years more rapidly than those of other pursuits. House rent, service, means of locomotion—and, be it remembered, all these items represent more to the medical man than to others of like income, because they are imposed by the needs of his occupation, and not merely conditioned by what is warranted for living purposes from the net profits thereof—professional outfit, all are vastly more expensive than they were a few years ago. The increase of knowledge, moreover, as to the nature of the myriad dangers that surround most forms of medical service, and particularly of surgical intervention, imposes a much heavier burden in labour, time, and money on the conscientious medical man than was the case a very few years ago, in the rendering of the same kind of aid. Why is it that even the gravest operations in surgery are now done with a lesser mortality risk than that which a decade or two back beset even comparatively trivial surgical interference? It is because, as a consequence of the discovery of unsuspected sources of danger, methods of precautionary preparation have been evolved, that entail a greater expenditure of time, trouble, and money prior and subsequent to the actual operation, as well as a much weightier sense of responsibility. Is it nothing to the patient that, as a result of this expenditure, he comes to operation with 20 times less risk of disastrous issue than would have been the case some years ago? And yet, in the face of these facts, the medical man is asked to burden himself with all the clerical paraphernalia and *personnel* of a business office. When patients can consent to do in the case of medical practitioners as business men and lawyers make their clients do—viz., come to an office for everything they want; when they can arrange to be ill and to require assistance only during business hours, thus enabling the medical man to separate entirely his "business" expenses from the cost of his private living, then—and we fear not till then—all medical men may be able to maintain the necessary clerical staff to put their accounts on what "Senior" and those who think like him would consider a business-like footing. The vast majority of medical men will render an account with items when it is required, for they are not without careful methods of recording the details of their services; but to send out such accounts to every patient as a matter of course would entail upon them clerical labour for which the public would have to pay.

The Influence of Parental Alcoholism on the Offspring.

To minds with a bent for fantastic speculation it might be suggested as a subject of curious consideration why controversy on the question of alcohol is so apt to produce in the controversialists many mental phenomena which have a singular resemblance to the effects which alcohol itself produces on the judgment and the temper of those who take too much of it. May we not, for instance, compare the expansive and genial phase of intoxication with that facile and uncritical mood which makes the participant in debates on this question ready to welcome in support of his side of the argument evidence of a kind that he would never think of offering or entertaining in reference to any other subject under the sun? And may we not again find the analogy of the quarrelsome stage of drunkenness in that pugnacious and aggressive temper, that readiness to discover unintended affronts and to impute discreditable motives, which appears unfortunately to be inseparable from any discussion of even the strictly scientific aspects of this question? These unpleasing characteristics have not been lacking in the acrimonious controversy regarding the influence of parental alcoholism on the offspring, a controversy of which we have heard so much in the last few months, and from which we might perhaps have learned a little more if it had been found possible to conduct the discussion in a less polemical temper.

It will be in the recollection of our readers that the recrudescence of interest in this particular aspect of alcoholism dates from the application to its study by Professor KARL PEARSON and his pupils of the Biometric School of those statistical methods to which they attribute so high a value in bio-social investigations. Their researches on this matter, the result of which was published last May in one of the series of memoirs issued by the Eugenics Laboratory,[1] led them to conclude that the traditional belief which ascribes to parental alcoholism an extremely injurious influence on the offspring is, like so many of the traditional beliefs that have come under the remorseless scrutiny of biometrics, entirely erroneous. So far, indeed, from any such injurious influence being traceable, Professor PEARSON and Miss ELDERTON find that as regards the intelligence, physique, and health of the children dealt with in their inquiry, "the balance turns as often in favour of the alcoholic as of the non-alcoholic parentage." Such a pronouncement not only fluttered the teetotal dovecotes, as it was well calculated to do, it also excited a good deal of surprise and scepticism in quarters quite free from the slightest suspicion of bias; and Professor PEARSON'S data and conclusions were subjected to much hostile criticism both on medical and economic grounds. The criticisms from the medical point of view were formulated more particularly by Sir VICTOR HORSLEY and Dr. C. W. SALEEBY, and they were also urged with much force by several speakers who took part in the debate on this question at the meeting of the Society for the Study of Inebriety on Jan. 10th.

[1] A First Study of the Influence of Parental Alcoholism on the Physique and Ability of the Offspring, by Ethel M. Elderton and Karl Pearson.

Professor PEARSON was not present at this meeting, but had answered his critics with characteristic vigour and reaffirmed his position in a succession of pamphlets issued in the same series in which the original memoir appeared, so that there is no lack of material from which to form an idea of the points at issue between Professor PEARSON and his opponents, and of the grounds of their difference of opinion.

Essentially the discussion has turned on the validity of the data used in the biometric investigation. It appears from the first memoir that these data were derived from two sources—viz., from an account of the children in the special schools for the mentally defective in Manchester prepared by Miss MARY DENDY, and from a report of the Edinburgh Charity Organisation Society dealing with the children attending a large elementary school in that city. From the information furnished in these documents Professor PEARSON worked out the correlation coefficients between the alcoholism of the parents (as estimated by the social workers who surveyed the homes) and various conditions measuring the physical and mental fitness of the children, arriving at the conclusion indicated above. The critics of the memoir object that in these data there is no proof that the "alcoholic parents" suffered from alcoholism at all, at least in the medical sense of the term, which in this connexion means chronic alcoholism, and that there is no evidence *a fortiori* of their having so suffered prior to the birth of the children; and they might emphasise this objection by pointing out that Professor PEARSON's figures show over 64 per cent. of the Edinburgh schoolboys as having "alcoholic" fathers, and over 34 per cent. as having "alcoholic" mothers, a prevalence of chronic alcoholism which, indeed, the wildest teetotal imagination would hardly have attributed even to Edinburgh! Nor has criticism been confined to the character of the data; the way in which they have been handled has also been called seriously in question by Sir VICTOR HORSLEY and Dr. MARY STURGE in the *British Medical Journal* last week. Professor PEARSON,[2] in a second communication, had taken a like attitude towards the temperance advocates, and it must be admitted that he has little difficulty in showing that a certain amount of what passes for evidence on this question rests on poor foundations. He appears, however, to have taken his "random samples" of evidence as a sufficient proof that all the medical observations indicating the injurious influence of parental intoxications are equally valueless; this is hardly a view that can be accepted without further demonstration, nor is it altogether clear that the method of "random samples" can be applied to the evidence in favour of a theory as a test of the truth of the theory; the value of a conclusive experiment is not affected because a thousand faulty experiments were tried before it and were adduced as evidence in support of the view which it alone, if sufficiently, proves. There are, indeed, very few truths recognised to-day which have not at one time or another been defended by silly arguments and bad evidence as well as by sound arguments and good evidence. However, even among the very few witnesses whom he selects for criticism in his rebutting memoir Professor PEARSON himself recognises that there are differences in scientific authority, and he very rightly treats Professor DEMME's contribution to the question as deserving a degree of serious consideration that need hardly be given to certain of the more lurid American statistics. Professor DEMME[3] contrasted two groups, each composed of ten families, with whose history he was intimately acquainted. In one group the parents were sober, in the other group one or both parents drank to excess and suffered from chronic alcoholism. And he found that the children of the alcoholic families, as compared with the children of the sober families, showed a very high infant death-rate and a very high incidence of epilepsy, weak-mindedness, and other indications of innate defect. Professor PEARSON argues that the figures given by Professor DEMME are only consistent with the assumption that the cases were selected and were extreme instances, and that they cannot be taken as typical of the normal effects of alcoholic parentage. There remains, of course, the difficulty that even if these be extreme cases they do undoubtedly point to an association between alcoholism in the parent and defect in the offspring; and this difficulty Professor PEARSON endeavours to meet by the hypothesis that in such cases the alcoholism is the expression of a hereditary defect which also accounts for the degenerate conditions in the children. Professor PEARSON, however, implies that he has taken Professor DEMME's figures from summaries of his work and has not consulted the original paper; had he done so he would have found that Professor DEMME had partially anticipated this objection and had classified his alcoholic families from the point of view of their hereditary antecedents; the families where hereditary taint could, in the opinion of Professor DEMME, be excluded still showed a very high ratio of defect in the children, though not so high as in the families where alcoholism was associated with another degenerative factor in the stock. Apart, however, from its bearing on Professor DEMME's figures, Professor PEARSON has tried to establish his theory, that extreme alcoholism is an effect of degenerative tendency, by appealing to the experience of the inebriate reformatories; and in an elaborate memoir,[4] written in conjunction with Miss BARRINGTON and Mr. DAVID HERON, he has analysed by the biometric methods a series of 207 observations of female inebriates in the Lancashire Certified Reformatory at Langho. To some extent this seems to be rather a work of supererogation, for, without any statistical proofs, it is common ground that the so called inebriates who have been dealt with under the Inebriates Act of 1898 are practically all cases of congenital mental deficiency, their inebriety, so far as it exists, being merely a secondary and by no means very significant symptom of their innate debility. What Professor PEARSON's critics would probably dispute is the assumption that such cases are instances of "extreme alcoholism" in the sense in which the term is used in this controversy—that is to say, instances of extreme chronic intoxication; and they would certainly be able to maintain that the natural intolerance of

[2] A Second Study of the Influence of Parental Alcoholism on the Physique and Ability of the Offspring.

[3] Ueber den Einfluss des Alkohols auf den Organismus des Kindes, Stuttgart, 1891.

[4] A Preliminary Study of Extreme Alcoholism in Adults, by Amy Barrington and Karl Pearson, with the assistance of David Heron, D.Sc.

alcohol which these "inebriates" display must of itself prevent any such intense intoxication as might be expected to act on the germinal cells. If we are to ascertain by statistics the relation of "extreme alcoholism" to the mental and physical condition of the drinkers and the drinkers' children, it is not to these cases we should go, but to the instances of well-marked chronic alcoholism which do not find their way to inebriate reformatories at all because they are not generally "inebriates" in the policeman's sense of the word; and the Act of 1898, of course, leaves the diagnosis of the inebriate altogether to the policeman.

It appears very evident, then, that all this outpouring of polemical literature still leaves the question very much where it was. It has not, however, been altogether useless, for it has probably made both parties to the controversy a little less sure of being the sole depositories of truth, and it should also render them a trifle more circumspect with regard to the character and source of the data on which they base their theories. If it has any such effect, it will have brought a very new and acceptable spirit into the discussion of this vitally important bio-social problem.

Annotations.

"Ne quid nimis"

ENGLISH URBAN VITAL STATISTICS IN 1910.

THE annual rate of mortality in the 77 largest English towns during the 52 weeks of last year, calculated on the population estimated by the Registrar-General to the middle of the year at 16,940,895, was unprecedentedly low, and did not exceed 13·4 per 1000. In the four preceding years 1906–09 the death-rate in the 76 towns, then dealt with in the Registrar-General's weekly returns, declined successively from 15·9 to 15·4, 14·9, and 14·7 respectively. The Registrar-General's estimate of the population of these large towns, including London, is based on the assumption that the rate of increase that prevailed therein between the last two censuses in 1891 and 1901 has since been maintained. It seems, however, more than probable that on this hypothesis the present population of many of these large towns is over-estimated, and that consequently the aggregate true death-rate is somewhat under-stated. That the death-rate in these 77 towns has shown a steady and persistent decline in recent years, and that it is now unprecedentedly low, seems, however, to be beyond question, and affords conclusive evidence of improved and successful urban sanitary administration. One of the most satisfactory and hopeful features of the recent steady decline in our urban death-rates is the continued decrease of infant mortality. In 1906 the deaths of infants under one year of age in these largest English towns was equal to 145 per 1000 registered births; in the three following years this proportion of infant mortality declined to 127, 129, and 118 respectively; and during the 52 weeks of last year further fell to 115 per 1000. This decline in the rate of mortality in our largest towns has, however, been accompanied by a steady decline in the birth-rate, which was equal to 27·8 per 1000 in 1906, but fell successively to 27·0, 26·9, and 25·7 in the three following years 1907–8–9. The births registered in the 77 towns during the 52 weeks of 1910 were only equal to 24·8 per 1000, showing a decline of 3 per 1000 from the rate that prevailed in 1906. If, however, the aggregate population of these towns is now over-estimated, the calculated birth-rate is somewhat understated, but its marked and steady decline is beyond doubt.

IODINE AS AN ANTISEPTIC.

As our columns in the past year show, a much simplified method of preparing the skin for operation—painting it with tincture of iodine—has come into vogue and proved very reliable. This method has been in use on the continent for some years, where also the value of iodine as an antiseptic generally seems to be much more appreciated than here. Professor Reclus has called attention to the great value of iodine in the disinfection of the wounds of the hands of workmen, which are difficult to sterilise in consequence of the thick skin covered with grease and dirt. In the *New York Medical Journal* of Dec. 3rd last Major Frank T. Woodbury, of the Medical Corps of the United States Army, claims that iodine is an ideal disinfectant and antiseptic, as it is cheap, easily obtainable, can be carried in small bulk, is efficient in high dilution, and does not damage tissue even when its vitality has been much reduced by traumatism or infection. He has found it invariably successful as a germicide, and though it has great power of penetration he has never seen a case of poisoning, even when the peritoneum was mopped out with it. It can be used to disinfect the area of operation without previous preparation, to sterilise instruments, sutures, dressings, and the hands of the surgeon. However, the continued use of iodine tarnishes instruments and blunts the cutting edge. Major Woodbury uses tincture of iodine entirely to prepare his hands and it rarely causes irritation. It can be removed by means of boiled or raw starch, ammonia, hydrogen peroxide, Fowler's solution, or ether. But after long periods of operation removal of the colour may be very difficult, therefore it is better then to dip the hands in the iodine and immediately decolourise with ammonia. A solution of one teaspoonful of the tincture to a quart of normal saline solution is of a strength of 0·007 per cent. and is most efficacious for the irrigation of catarrhal mucous membranes, as in conjunctivitis and cystitis. According to Major Woodbury, tincture of iodine is the most valuable drug that the railroad and military surgeon can have, while it enables as good results to be obtained in the cottage as in the most modern operating theatre. He suggests that it should be applied throughout to all wounds and raw surfaces infected, or likely to be infected, and abscess cavities. The following are examples which he gives of its use. A soldier, aged 29 years, sustained lateral dislocation of the left knee with severe laceration of the internal lateral and capsular ligaments. The joint was opened and explored with the finger, and the torn ligaments were freshened and sutured with kangaroo tendon, and the skin incision closed with silkworm gut. Tincture of iodine was used for sterilising the surgeon's hands, the area of operation, the depth of the wound, and the sutures. A dry dressing was applied. Convalescence was rapid, and on the eleventh day the patient was going about on crutches. A soldier, aged 24 years, was run over by a heavy wagon and sustained a compound comminuted fracture of both bones of the left leg. He was taken to hospital ten miles across the prairie. Under chloroform Major Woodbury removed the clothing and shoe from the leg and found a nasty wound with 3 inches of tibia lying crossways in the leg, the soft parts much crushed, and numerous splinters of bone. He washed the dust from his hands, dipped them in tincture of iodine, and explored the wound. While the foot was held in extension he refitted the broken fragments of tibia in place, brought the ends of the fibula in apposition, and removed splinters and

shreds of flesh. With long sutures he approximated the severed muscles and thoroughly mopped out the wound with tincture of iodine. Nothing more was done as the tissues were too damaged to stand any manipulation, and wiring the bones would, he considered, have caused extensive necrosis. A posterior wire splint and plaster-of-Paris were applied and a dry dressing, while a large anterior fenestra was cut. The wound was irrigated daily with the iodine salt solution. Some sloughing took place, and when this had ceased repair was rapid. There was never suppuration, fever, or pain. Eight weeks after the accident the wound was healed; the lower end of the fragment had united by firm bony union and the upper by fibrous union.

SUDDEN ONSET OF ENTERIC FEVER BY HÆMORRHAGIC NEPHRITIS.

ACUTE hæmorrhagic nephritis is a rare complication of enteric fever; still rarer are cases in which the onset of the disease is marked by this complication and the eruption occurs later. An example was reported at the meeting of the Société Médicale des Hôpitaux of Paris on Dec. 2nd, 1910, by M. A. Pissavy and M. Gauchery. On Sept. 7th a youth, aged 18 years, was admitted into the Pitié Hospital with all the symptoms of acute hæmorrhagic nephritis. The urine was of normal quantity, but of a blackish red colour, and contained a large quantity of albumin. Microscopic examination showed granular and blood casts and deformed red blood corpuscles. There were also intense headache, a dicrotic pulse of 100, a temperature of 104° F., bronchitic râles, furred tongue, constipation, enlarged spleen, and œdema of the lower limbs. The history was that eight days previously the symptoms began suddenly after a chill. The dicrotic pulse, the want of correspondence between the pulse and temperature, and the splenic enlargement should have suggested the diagnosis of the renal form of enteric fever, but this possibility was not considered. On Sept. 14th rose spots appeared, diarrhœa replaced the constipation, and Widal's reaction was positive in a dilution of 1 in 50. From the 15th to the 20th the amount of blood in the urine in proportion to the albumin began to diminish. On Oct. 5th the temperature reached normal, the urine was clear, and the quantity of albumin had fallen to half a gramme per litre. On the 9th the patient was discharged, and his urine contained a quarter of a gramme of albumin per litre. M. Pissavy and M. Gauchery have found recorded in the *Thèses de Paris* five similar cases. In the first a man, aged 24 years, after a chill had to take to bed with headache and fever. When taken to hospital a week later he had a temperature of 102·2°, a pulse of 90, a puffy face, and bloody and highly albuminous urine. The appearance 48 hours later of rose spots allowed the diagnosis of acute nephritis to be revised. Recovery ensued. In the second case a man, aged 37 years, was taken to hospital in a state of profound stupor, with a temperature of 102·8°, a pulse of 98, and an enlarged spleen. The urine was scanty and highly albuminous. He had been ill for ten days. On the day after admission the urine was suppressed. Jaborandi was given and produced sufficient diuresis, but the urine was bloody. Five days later rose spots appeared. After three weeks the patient was discharged, the urine containing only a trace of albumin. In the third case a woman, aged 20 years, was suddenly attacked with headache, nausea, giddiness, oliguria, and hæmaturia. The urine contained much albumin. After eight days rose spots appeared and her condition became worse. She died on the fortieth day. At the necropsy the kidneys were found very large and congested. In the fourth case a woman, aged 21 years, was seized with headache, backache, vomiting, and diarrhœa. Five days later she was admitted into hospital in a state of high fever. The urine was scanty and contained a large quantity of albumin. Three days later it became bloody and rose spots appeared. Death occurred on the eighth day of the fever. As in the previous cases, the kidneys were found large and congested. In the fifth case a man, aged 21 years, was admitted into hospital on the fifth day of a severe fever. Forty-eight hours after the onset he noticed that the urine was blackish. On admission the urine contained blood, a large quantity of albumin, and numerous casts. The temperature was 103·5° and the pulse was 101. The liver and spleen were enlarged, and there was gurgling in the right iliac fossa. Death occurred on the thirteenth day of the typhoid fever. These cases show several noteworthy points. The first is the suddenness of onset of the renal symptoms. The second is the prognostic importance of the amount of urine secreted. In two of the three fatal cases there was persistent oliguria; in the other case the quantity of urine secreted is not stated. On the other hand, in the present case the amount of urine secreted was always satisfactory, and in the second case quoted there was only temporary oliguria. But the prognosis of this form of typhoid fever is grave; the six cases show a mortality of 50 per cent. In all the cases the cause of the nephritis seems to have been overlooked until the appearance of the rose spots, although it should have been suspected in consequence of two symptoms—enlargement of the spleen and want of correspondence between the temperature and pulse. The former was about 104° while the latter was only about 90 to 100.

THE BOROUGH OF PORTSMOUTH AND THE TREATMENT OF PULMONARY TUBERCULOSIS.

WE have received a copy of a special report presented to the council of the borough of Portsmouth on the subject of "The Provision of Sanatorium Treatment and Tuberculin Dispensaries for the Treatment of Inhabitants of the Borough suffering from Consumption," by Dr. A. Mearns Fraser, medical officer of health. The report was prepared in response to a request from the health committee as to the need for the council using its powers under the Public Health Act of 1875 permitting local sanitary authorities to provide sanatorium treatment for patients, whether in receipt of relief or not. The authorities of the borough of Portsmouth are already endeavouring to assist in the combat against tuberculosis by active administration of the Housing of the Working Classes Acts, by giving advice to persons affected with pulmonary tuberculosis, by providing sputum bottles, by disinfecting infected houses, and by affording means for free bacteriological diagnosis. Dr. Fraser in his report gives some details of the approximate cost of building and maintaining a sanatorium, and discusses briefly and in simple language the value of sanatoriums as curative and as educational institutions. He refers to some German statistics and to the published reports of certain English sanatoriums, laying special stress upon the importance of early diagnosis and of effective after-care. He concludes that it is inadvisable at present to provide a sanatorium for the treatment of the patients in the borough of Portsmouth. He is careful to add that he is not in any way opposed to this method of dealing with the disease, but he maintains that any scheme to deal with it comprehensively would be much too costly, and that the expenditure necessary to treat even a small percentage of the cases in the borough by this means would be more successfully applied in another direction. The alternative suggested consists in the establishment of a tuberculin dispensary and giving it one year's trial. It is estimated that the cost will be £600, a sum which is to pay for the dispensary and all expenses connected with it, including medical

attendance, a nurse, a caretaker, drugs, and apparatus. Dr. Fraser makes a few general statements in regard to the nature of tuberculin and its use for diagnosis and treatment. He quotes the published statistics of Dr. W. Camac Wilkinson, and refers to certain other groups of cases treated by tuberculin. He also mentions that he has attended at the Kennington Tuberculin Dispensary, observed the methods there employed, and seen some of the cases. He concludes by recommending the establishment of a tuberculin dispensary, at the same time admitting that this method of treatment must be regarded as on trial, and deprecating any unduly sanguine hopes from it. If the borough authorities decide to carry out these recommendations the results obtained should be of great interest and value, but only if the strictest precautions are taken in regard to the diagnosis of the cases treated by the tuberculin method. We have no wish to criticise the views set forth by Dr. Fraser, which are carefully expressed and are obviously the outcome of an earnest study of the question, but in the light of recent work on the diagnosis of tuberculosis, to which reference was made in the interesting paper by Dr. A. C. Inman published in THE LANCET of Dec. 17th last, the statement made by Dr. Fraser that a rise of temperature after a small dose of tuberculin shows that a patient is tuberculous requires qualification. At any rate, if every case giving such a rise after one small injection is submitted to treatment by tuberculin the results will be of less value than if the cases treated are demonstrated to have active tuberculous lesions.

PHYSIOLOGICAL VARIATIONS IN THE LEUCOCYTE COUNT.

IT is well known that variations in the normal leucocyte count occur as the result of certain physiological conditions, and the normal limits are usually given as from 6000 to 8000 per cubic millimetre. An interesting paper is published in the *Archiv für Experimentelle Pathologie und Pharmakologie* of Dec. 13th, 1910, by Dr. V. Ellermann and Dr. A. Erlandsen of Copenhagen. They point out that some of these physiological variations are very rapid and evanescent, while others are slower in development and more lasting. They suggest that alterations in the number of leucocytes must in all probability be due to one of three causes—viz., new formation or destruction of leucocytes, alterations in the concentration of the blood, or changing distribution of the corpuscles in the vascular system. Some of the physiological variations can scarcely be due to new formation or destruction, since they occur with too great rapidity. The part played by alterations in the concentration of the blood is difficult to establish. Some observations are on record which tend to show a relation between the blood pressure on the one hand and the number of red corpuscles, the proportion of hæmoglobin, and the specific gravity of the blood on the other. Grawitz showed that paralysis of the vaso-motor nerves could produce a rapid diminution of the concentration of the blood, but it has been pointed out that this is not necessarily due to the alteration in blood pressure. Hot and cold baths cause variations in the number of red and white corpuscles, the white count being much more affected than the red. Some other experiments by Becker and Hess tend to show that variations occur only in the blood in the capillaries, or in that of the veins and capillaries as a result of changes in blood pressure. Tornow, who examined the blood from capillaries after prolonged marches, found on an average an increase amounting to 43 per cent. in the leucocytes, while the increase in the red was only 9 per cent. In the light of these results and of their own experiments, Dr. Ellermann and Dr. Erlandsen conclude that alterations in concentration play at most a subordinate part in the production of physiological variations in the leucocyte count, and they attribute the chief importance to the varying distribution of the leucocytes in the different vascular areas. They then discuss some of the conditions causing more or less rapid variations in the number of leucocytes. The leucocytosis of digestion has been regarded as a true leucocytosis—i.e., as due to the development of fresh corpuscles—but Dr. Ellermann and Dr. Erlandsen see no convincing arguments in favour of this view, and suggest that it may own a similar explanation to the other variations. The leucocytosis of childbirth, which increases markedly after the onset of the pains, diminishes after the birth of the fœtus and increases again during the after-pains, is regarded as due to the associated muscular contraction and as belonging to the group called by Schultz leucocytosis of effort (*arbeitsleucocytose*). Schultz showed that during muscular work the leucocytes might increase from 25 to 50 per cent., a fact confirmed by the observations of Tornow, to which reference has already been made. Hasselbach and Heyerdahl have shown that variations in the leucocyte count occur on sudden change from the erect to the recumbent position and *vice versâ*, a change which they distinguish as a static leucocyte reaction. The explanation offered of these changes is that owing to the increased force of the heart's action and the greater velocity of the blood-stream produced, the leucocytes are forced from their peripheral position in the deeper vessels and hence reach the superficial capillaries in greater numbers. Dr. Ellermann and Dr. Erlandsen have repeated and extended these observations, using special precautions against error, and employing a special method of mixing so as to obviate the defective admixture obtained with the ordinary form of pipette. As a result of 23 observations upon healthy persons and upon convalescents from mild illnesses they obtained in every case a definite alteration in the number of leucocytes on changing from the erect to the recumbent position and *vice versâ*, amounting to 26 per cent., an increase in the first case, a decrease in the second. This reaction is a very rapid one; it attains its maximum in from 15 to 45 seconds after the change of position, and disappears in from 45 to 90 seconds. Some observations upon the leucocytosis of effort showed that this also was of brief duration, lasting only two or three minutes. Psychical influences also appear to modify the leucocyte count, probably through their action upon the heart. Some experiments made upon rabbits showed that the injection of strophanthin led to an increase in the leucocyte count. All these observations are regarded as confirming the explanation already mentioned of these rapid variations in the number of leucocytes.

THE POLYTECHNIC.

THE Polytechnic, founded by the late Quintin Hogg in 1882, is being rebuilt at a cost of £90,000. This rebuilding fund was inaugurated by a grant of £20,000 from the London County Council and a loan of £20,000 from the City Parochial Foundation. The sum of £50,000 which is needed to complete the fund has been subscribed by Lord Leith of Fyvie, the governors, members, and students of the Polytechnic, and other friends intimately associated with the institution as a memorial to his late Majesty King Edward VII. The money required for the rebuilding of the Polytechnic having been subscribed privately a large number of old members, scholars, students, and travellers are ignorant of the matter. It is believed that the scheme will appeal to all who have ever been identified with the Polytechnic, and that many who are now holding positions of value and responsibility will be glad to have a share in perpetuating the work of the founder and of associating

the new building with the memory of King Edward VII. In consequence of this belief it has been decided to reserve to them the opportunity of contributing the sum of £2500. For this purpose the fund will be kept open until Easter, and subscriptions in amounts varying from £100 to £1 will be received. We are requested to assure all those who have ever been associated with the Polytechnic, wherever they may be, that their help will be cordially appreciated. Subscriptions may be paid in instalments terminating in June, 1912, and should be sent to the Secretary, 309, Regent-street, London, W., or to Mr. J. E. K. Studd, the President and chairman.

THE LECTURES AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE following lectures at the Royal College of Surgeons of England are announced to take place. Mr. Edmund Owen will deliver the Hunterian oration at 4 P.M. on Tuesday, Feb. 14th. Two lectures on "Colour Vision and Colour Blindness" will be given by Dr. F. W. Edridge-Green on Feb. 1st and 3rd; two lectures on "The Immunity Reaction in Relation to Surgical Diagnosis," by Dr. W. d'Este Emery on Feb. 6th and 8th; a lecture on "New Views on the Chemical Composition and Mode of Formation of Renal Calculi and the Metabolism of Calcium in Gout and Allied Conditions," by Professor B. Moore, on Feb. 10th; three lectures on "The History of Mummification," by Professor G. Elliot Smith, on Feb. 13th, 15th, and 17th; six lectures by Professor Arthur Keith, on "The Anthropology of Ancient British Races," illustrated by the Museum Collection, on Feb. 20th, 22nd, 24th, 27th, and March 1st and 3rd; and a lecture by Mr. K. W. Goadby, on "The Association of Diseases of the Mouth with Rheumatoid Arthritis and Certain other Forms of Rheumatism," on March 6th. The lecture hour is 5 P.M. precisely.

RECENT REPORTS UPON THE INVESTIGATION OF TRYPANOSOMIASIS.

THE difficult problems associated with trypanosomiasis in man and animals continue to receive the careful attention of British investigators. As evidence of this we may mention that at the recent December meeting of the Royal Society no fewer than six papers on this subject were entered on the Proceedings. Two of these papers were contributed by Colonel Sir David Bruce, F.R.S., in association with his colleagues of the Sleeping Sickness Commission of the Royal Society, which has been at work quite lately in Uganda. Both of these contributions deal with "Trypanosome Diseases of Domestic Animals in Uganda," the first relating to Trypanosoma uniforme and the second to Trypanosoma nanum. These two papers are in continuation of a series of former contributions made to the Proceedings of the Royal Society during 1910, and are numbered respectively IV. and V. Trypanosoma uniforme, it appears, resembles T. vivax in shape and general appearance, but differs markedly in size; it also resembles T. vivax in not being pathogenic to the smaller laboratory animals. T. nanum is indistinguishable from T. pecorum either in the living condition or when fixed and stained, but it differs from T. pecorum in not being pathogenic to the smaller laboratory animals. There is no evidence as yet available to show what is the carrier of these two trypanosomes, T. uniforme and T. nanum, but it is probable that the carrier of T. pecorum acts also for T. nanum, since both diseases occur under the same conditions. Four of the papers read in December before the Royal Society were contributed by investigators connected with the Liverpool School of Tropical Medicine, the first of them being entitled "The Life-History of Trypanosoma Gambiense and Trypanosoma Rhodesiense as seen in Rats and Guinea-pigs," by H. B. Fantham, D.Sc. Lond. This interesting paper describes the formation of "latent bodies" from flagellate trypanosomes and the metamorphosis of latent bodies into trypanosomes. The second paper by the same writer, in conjunction with Dr. J. G. Thomson, is a preliminary note on "Enumerative Studies on Trypanosoma Gambiense and Trypanosoma Rhodesiense in Rats, Guinea-pigs, and Rabbits; Periodic Variations Disclosed." These investigations were undertaken at the suggestion of Major Ronald Ross under funds allotted by the Tropical Diseases Research Committee, and under the "Sir Edwin Durning-Lawrence Fund." The third of the papers contributed by the Liverpool investigators is by Major Ronald Ross, F.R.S., and Dr. David Thomson, and comprises further observations on a "Case of Sleeping Sickness Studied by Precise Enumerative Methods." These authorities are of opinion that the periodic increase of trypanosomes observed is due to their active multiplication, and that their decrease is owing to their rapid death and a cessation of multiplication probably depending on certain conditions, including the presence of antibodies in the serum and the large increase of leucocytes, especially mononuclears. The last of the contributions is furnished by Major Ross and Dr. J. G. Thomson, and is a preliminary note on "Experiments on the Treatment of Animals Infected with Trypanosomes, by means of Atoxyl, Vaccines, Cold, X Rays, and Leucocytic Extract; Enumerative Methods Employed." These investigations were conducted by funds given by Sir Edwin Durning-Lawrence for the purpose of testing the effect of cold on disease, and were suggested by Major Ross as a part of the studies made in connexion with a case of sleeping sickness reported upon by him and by Dr. David Thomson. The six papers which we have mentioned above form a valuable contribution to the literature of trypanosomiasis, and demonstrate that British investigators are not being left behind by their continental brethren.

THE INTERNATIONAL HYGIENE EXHIBITION AT DRESDEN.

IN THE LANCET of Jan. 14th we referred to the forthcoming International Exhibitions and Congresses during 1911, and congratulated the country on the fact that, recognising the importance and value to the nation of representation at such international undertakings, the Government had appointed a permanent department of the Board of Trade to assist intending exhibitors with its experience. We commented especially on the importance of proper British representation at the International Hygiene Exhibition, to be held this summer at Dresden, in view of the mutual advantage that would accrue from a comparative study of German and British attainments in the hygiene of the factory and the workshop and in domestic hygiene. It would seem, however, that there is now some doubt of our representation at this exhibition in consequence of a lack of funds, for an appeal at this late date is being made by an important committee, headed by the Presidents and Ex-Presidents of many of the Royal Colleges, for the sum of £10,000 to meet the necessary expenses. Complaints have reached us that the Government has proved unsympathetic in this particular case. We are aware that the permanent department of the Board of Trade was instituted, not to cut the Gordian knot of difficulties with a cheque in payment of the cost, but to minimise the waste in labour and expense and to obviate the pitfalls due to lack of knowledge in such matters as modes of conveyance, tariffs, custom-house procedure, and local arrangements, the adjustment of all of which it is prepared to undertake. But it will be a serious misfortune if British hygiene fails to be adequately represented at the Dresden Exhibition, because

the Government does not see its way to make the same contribution towards expenses that is being made by all other important Governments. We hope sincerely that the £10,000 for which the scientific committee is appealing in our columns this week will be forthcoming before it is too late.

THE CHILD-STUDY SOCIETY OF LONDON.

THERE are now 400 members and associate members of this society, and it is desired to increase this number and to make the society more widely known. The honorary secretary, Mr. W. J. Durrie Mulford, 91, Buckingham Palace-road, London, S.W., will be glad to send information as to its objects and activities to all who are interested in child-study. The study of the healthy child in its hygienic, educational, and social aspects is more and more forcing itself upon the attention of the medical man, and prudent parents are now aware of the value of expert guidance, preferably medical, in the upbringing of their children, and of the possibilities of developing the educational and social as well as the moral and physical characters of children along definite and desirable lines. The proper study of preventive medicine in its sociological department includes the study of such problems as form the subjects of the series of lectures and discussions to be held under the ægis of the Child-Study Society during the ensuing months. On Jan. 26th a lecture will be given by Mrs. M. Scharlieb, M.D., on the "Recreational Activities of Girls during Adolescence." The lecture on "English Folk Dances," with demonstrations, to be given on Feb. 9th by Mr. C. J. Sharp, promises to prove interesting and attractive; and that on March 9th by Mr. Stewart Macpherson, on "Appreciative Music Study: its Application in the Training of the Child,' will open up a subject to which little attention is usually given in educational schemes. The course of fortnightly lectures will end on April 6th, when Mr. A. R. Ableson will speak on "The Measurement of the Intelligence: with Special Reference to Mentally Defective Children." A conference of combined societies at Halifax in July, under the presidency of Sir James Crichton-Browne, F.R.S., is also announced.

THE SYNDROME OF SPHENO-PALATINE (MECKEL'S GANGLION NEUROSIS.

Dr. Greenfield Sluder, clinical professor of diseases of the nose and throat in the Washington University, St. Louis, U.S.A., describes in the *American Journal of the Medical Sciences* for December last an interesting symptom-complex, whereby involvement of Meckel's ganglion may be diagnosed with certainty. Meckel's ganglion, as it lies in the pterygo-maxillary fossa, is close to the nasal mucous membrane, and in intimate anatomical relation with the sphenoidal and post-ethmoidal sinuses above, the maxillary sinus in front, and often with the sphenoidal sinus posteriorly. Hence it is not surprising that the ganglion should be affected by inflammation in these cavities. It is in direct association with the superior maxillary division of the fifth cranial nerve, motor fibres leave it on their way to the soft palate and uvula, while some at least of the taste fibres from the tongue course through it. When its function is impaired, then a triad of symptoms may be looked for. First of all, there is wide and characteristic distribution of pain along definite lines, sometimes of great severity. It is usually described as a pain at the root of the nose, in or about the eye, in the upper jaw and teeth, and extending to the ear to take on the form of earache. It is often particularly severe at the mastoid, or at a point about two inches posterior to this, and it may "overflow" to the occiput, neck, shoulder, sometimes even to the arm and hand. There is commonly also pain or itching inside the nose. An objective accompaniment of anæsthesia on the soft palate on the affected side, and over the pharynx as far down as the lower part of the tonsil, is not infrequent. From the motor point of view the configuration of the soft palate is very frequently altered. The palatal arch is usually higher on the affected side, and in movement the uvula and the raphé deviate to the opposite side. During this act the dimple which normally forms in the median line is displaced to the opposite (sound) side. Gustatory changes are interesting and important. It will be remembered that the great superficial petrosal (Vidian) nerve runs backwards from the ganglion to join the facial nerve at the geniculate ganglion, and that along it pass taste fibres coming from the tongue *viâ* the chorda tympani. In almost every case (Professor Sluder has had experience of 60) there has been a diminished and delayed perception of taste in the middle third of the tongue on the same side as the lesion. The neuralgic pains can generally be relieved by the application of cocaine to the nasal mucous membrane covering the spheno-palatine foramen. A single drop of a 20 per cent. solution may be all that is required; or three applications of a saturated solution (67 per cent.) allowed to soak in over the foramen for 10 minutes at a time may effect a lasting cure. Professor Sluder has had excellent results by injecting alcohol into the ganglion. Sometimes the relief experienced when the ganglion is efficiently cocainised is almost startling. A brief statement is made at the close of the article as to the ocular pain in ten cases of glaucoma having been controlled by the application of cocaine to the spheno-palatine foramen.

HOSPITAL ISOLATION AND TREATMENT OF MEASLES AND WHOOPING-COUGH.

THE result of the important experiment in the isolation and treatment of cases of measles and of whooping-cough in the Metropolitan Asylums Hospitals will be watched with much interest by all who are engaged or interested in public health administration. During the 52 weeks of last year no fewer than 1931 deaths from measles and 1363 from whooping-cough were registered in London, these numbers not differing materially from the average numbers in the ten preceding years. The average proportion of the deaths from these two diseases occurring among children under five years of age is fully 95 per cent.; the fatality of these diseases has therefore an obviously important bearing on the rate of child mortality. On Jan. 7th the Metropolitan Asylums Hospitals and the London Fever Hospital contained 153 cases of measles and 82 of whooping-cough. In connexion with this experiment the experience of the London Fever Hospital, which has for some time been receiving cases of measles, is distinctly interesting. The London Fever Hospital contained two cases of measles at the beginning of last year; during the 52 weeks of the year 207 additional cases of this disease were admitted, 191 were discharged recovered, and 18 cases remained under treatment in the hospital at the end of the year. The fact that not a single death occurred among the 209 cases of measles under treatment during the year affords the strongest evidence of the beneficial effect of the hospital treatment of this disease. No cases of whooping-cough appear to have been treated in the London Fever Hospital during last year, but 210 cases of scarlet fever, 73 of diphtheria, 8 of enteric fever, and 42 of "other diseases" were admitted, making in all 540 cases. It is interesting to note that only three deaths from diphtheria, two from scarlet fever, and one from "other diseases" occurred during the year in this hospital among the total number of cases under treatment. Among the completed cases of scarlet fever the two deaths were only equal to 0·9 per cent., and of the 74 completed cases of diphtheria the three

deaths were equal to 4·1 per cent. These figures testify to the successful treatment of infectious diseases in the London Fever Hospital.

VULVO-VAGINITIS IN CHILDREN.

THE condition of vulvo-vaginitis in young girls is often a troublesome and somewhat intractable affection, especially in those cases of gonococcal origin. Even after vigorous local treatment the condition is very liable to recur, especially if rigorous precautions in regard to cleanliness are not carried out. Dr. Th. Perrin, of Lausanne, in a paper published in the *Allgemeine Medicinische Central-Zeitung* of Dec. 29th last, describes a method of treatment which he claims gives a lasting cure within a fortnight or three weeks in ordinary cases and within a month even in inveterate cases. He maintains that the condition is not merely a vulvo-vaginitis, but that it is in all respects comparable to gonorrhœa in the adult female, save that in children an extension to the uterine appendages is rare, while vaginitis, which is less common in adults, is almost invariable. He also states that as in adults the cervical canal and the urethra are usually involved and that the relapses and recrudescences are due to re-infection from these parts. Both for diagnosis and treatment Dr. Perrin uses Nitze's urethroscope with a small tube—viz., 25 or 30 Charrière. He takes specimens of pus from the vulva, the os uteri, the vagina, and the urethra for purposes of microscopical examination. The treatment recommended is the application of a 10 per cent. solution of protargol in glycerine. If the urethra is affected the same solution is applied by means of a tube in which is a probe with a small plug of wool soaked in the solution. The cervical canal and the vagina are treated in similar fashion. A compress of 1 per cent. protargol solution is applied to the vulva for a few minutes three or four times daily. Dr. Perrin has treated more than 100 cases by this method with very satisfactory results.

THE King has approved of the appointment of Dr. Theodore Dyke Acland and Dr. StClair Thomson to the consulting staff of the King Edward VII. Sanatorium at Midhurst.

WE deeply regret to announce the death of Mr. Henry Power, late consulting ophthalmic surgeon to St. Bartholomew's Hospital, who was for over 40 years an active member of the staff of THE LANCET.

WE much regret to announce the death within a few weeks of his eighty-ninth birthday, of Sir Francis Galton, the famous anthropologist.

THE LONDON COUNTY COUNCIL AND THE MEDICAL TREATMENT OF SCHOOL CHILDREN.

WITHIN the next few weeks the position of the present scheme of providing medical treatment for school children in London through the agency of the hospitals may be expected to become critical, the London County Council having asked the Board of Education to agree to the extension for a whole year of the first agreements made with six of the hospitals. It seems doubtful whether the Board of Education will consent to a course which will have the effect of binding the Council to the present system for another 12 months. As an indication of the line the Board will probably take the following sentences from a letter recently addressed to the Council by the central authority[1] may be quoted:—

> The Board now felt it imperative to adopt a more critical attitude in regard to the Council's proposals. ..... The time was approaching when to would be unable to sanction the adoption of further schemes, even in an experimental basis, unless each particular scheme had been carefully thought out as regards all important details, and ..... *had been devised so as not to hamper or embarrass the local authority in adopting any comprehensive system of treatment which might commend itself to them in the future.*

[1] THE LANCET, Dec. 17th, 1910, p. 1774.

The words italicised would seem to preclude approval of the Council's proposal to continue the agreements for another year. The matter is of such importance that we append some particulars of the report on the subject presented to the London County Council at the end of the year by the Education Committee and the discussion thereon. The Education Committee stated that when the scheme of medical treatment in London was embarked upon it was said to be of an experimental nature, the arrangements with each hospital were limited to twelve months, and a report was promised at the expiration of that time in which the whole question would be reviewed in the light of the experience gained. The period during which most of the agreements with the hospital authorities had been in operation was much less than a year, and sufficient time had not elapsed for a considered judgment on the merits of the scheme to be formed. A report would be presented later. In the meantime it was necessary to deal at once with the question of the renewals of the agreements with six hospitals which would expire during the Christmas recess. These were: the Belgrave Hospital for Children, Clapham-road, S.W.; the Charing Cross Hospital; Hospital for Diseases of the Throat, Golden-square, W.; the London Hospital; the Metropolitan Ear, Nose, and Throat Hospital; and St. George's Hospital. The committee was not able to give full particulars as to the attendance of the children at these hospitals, but from a sample of cases taken at random it appeared that upwards of 85 per cent. of those who attended continued attendance until they were discharged.

Modified Arrangements with Six Hospitals.

The committee went into detail in regard to the agreements with each of the six hospitals. The Belgrave Hospital promised to provide treatment of 880 eye and 880 ear, nose, and throat cases during the year. During the period the agreement had been in force just over 500 cases had been treated in each department; 670 cases should have attended in each department after making allowance for holidays. The committee thought the governing body should be asked to regard its present number of cases as the minimum and to be prepared to treat further cases up to a maximum of 2640, or twice as many as at present. Charing Cross Hospital undertook to treat 1000 eye, 1000 ear, nose, and throat, and 200 ringworm cases. So far 1104 children had attended, and the full number who should have attended was 1734. Although this hospital was central and easily accessible there were within a reasonable distance other hospitals not included in the Council's scheme, where free treatment was available, and to these many parents had had recourse. In this case the committee recommended a reduction in the number of cases to be referred to the hospital to 500 ear, nose, and throat, 440 eye cases, and 200 ringworm cases. At the Hospital for Diseases of the Throat the Council paid 4s. for each case. There was no provision in the agreement as to numbers nor as to the payment of the medical staff. It was provided, however, that the staff should be qualified. Between Jan. 24th and Oct. 31st, 1910, 131 children attended, and it was estimated that from 100 to 200 would attend annually. As parents in this district had a wide choice of hospitals, at some of which free treatment was given, no number should be guaranteed to be sent to this hospital. At the London Hospital (3000 eye cases, 1500 ear, nose, and throat cases, and 250 ringworm cases) from Jan. 17th to Oct. 31st 2150 children attended the ophthalmic department, 1331 children in the ear, nose, and throat department, and 196 children in the skin department—total, 3679. The agreement with the hospital provided for 3654 cases in this period. This hospital was available for an extensive and thickly populated area of very poor people, and there was no difficulty in securing the attendance of large numbers of children. In the aural department there was at present a large waiting list. The committee estimated that in this district 9600 children would require treatment for ear, nose, and throat ailments, 3800 for affections of the eye, and 950 for skin diseases. The governing body of the London Hospital should be asked to arrange for the treatment of a minimum of 3000 ear, nose, and throat cases, 3000 eye cases, and 250 ringworm cases annually, and for the treatment of further ear, nose, and throat cases up to a maximum of 6000. The

present agreement should continue until the hospital was prepared to deal with the whole or part of the increase. At the Metropolitan Ear, Nose and Throat Hospital, which agreed to take cases up to a maximum of 500, 222 children had attended so far with the Council's voucher cards. The governing body of the St. George's Hospital (700 ear cases, 1100 eye cases, and 200 ringworm cases) had dealt with 1068 children between Jan. 17th and Oct. 31st, and did not desire to renew the agreement, although to avoid inconvenience to the Council it would continue a few months longer. The King's College Hospital had also intimated that it did not desire to renew its agreement when it expired next month. The committee recommended that the agreements with the six hospitals be renewed for 12 months, except in the case of the St. George's Hospital, in which six months was suggested.

The committee gave the following figures with regard to the results which had been obtained at the six hospitals :—

Hospital.	No. of children asked to attend up to 31/10/10.	No. of children the hospitals could have treated up to 31/10/10.	No. of children who attended up to 31/10/10.	No. of cases which have been investigated as to result of treatment.	No. of children under col. 5 who attended the hospital until discharged.	Percentage of children who attended until discharged.	Cost per case.
[(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
							s.d.
(i.) Belgrave Hospital for Children	1,809	1,340	1,024	326	298	91·4	5 8
(ii.) Charing Cross ...	1,941	1,575	942	433	400	92·4	6 0
(iii.) Hospital for Diseases of the Throat, Golden-square	316	750	131	40	33	82·5	4 0
(iv.) London Hospital	4,203	3,467	3,481	550	417	75·8	3 4
(v.) Metropolitan Ear, Nose, and Throat	383	375	222	110	87	79 1	4 0
(vi.) St. George's ...	1,523	1,416	960	237	221	93·2	7 6
	10,175	8,923	6,760	1,696	1,456	85·8	4 8

Discussion by the Council.

Mr. MATTHEW remarked that these figures showed a serious leakage between the number of children who needed treatment and those who actually received it. The hospital scheme had broken down because no means existed of compelling the attendance of the children at the hospitals. They would not have an efficient scheme until the Council had control of places to which children could be taken and where they would be treated under the discipline of the school. Mr. Matthew referred to infected ears as an ailment for which only compulsory treatment would be effective. The hospital scheme was not cheap, it was not effective, and it was preventing subscriptions from going to the hospitals. At the same time that it hurt the hospitals it hurt the parents, who, before the scheme was inaugurated, could get their children treated for nothing. Nobody was satisfied with the present scheme; one hospital did not want it, another accepted it under protest, and it was carried out generally as a favour to the Council.

Mr. H. E. A. COTTON expressed the hope that arrangements would be made with medical practitioners in North St. Pancras and Islington similar to those in Hampstead, Norwood, and Wandsworth, as these districts were so far from the general hospitals.

Mr. R. A. BRAY was afraid that the Board of Education would not consent to extend the agreements for 12 months, seeing that the report promised on the results of the first year's working had not been presented. He objected to the present scheme because it abolished free medical treatment in London—the hospitals were now rate-supported institutions and would be regarded as such—and because the Council had no means of knowing what went on in the hospitals, or whether it was getting value for money.

Mr. FRANK SMITH said the Council's medical officer had estimated the cost of treatment in clinics at 3*s.* 4*d.* per head, and if that figure was justified the present scheme was not only less efficient but more expensive.

Mr. BRAY moved an amendment to insert in the agreements with the hospitals the words: "Subject to the condition that nothing in the agreement shall prevent the Council's representative from visiting the premises at which treatment is provided when the treatment is being given." He mentioned that those very words were included in the agreements with associations of private medical practitioners.

Miss ADLER, who seconded, believed the hospitals would welcome such a provision, as it would lead to greater co-operation being established with the school medical service.

The amendment was lost, and the recommendations of the Education Committee were then agreed to.

MEDICINE AND THE LAW.

An Action against a Surgeon: Abbott v. Ryall.

ONE of the most important actions recently brought against a member of the medical profession in respect of his treatment of a patient occupied Mr. Justice Phillimore and a special jury for four days last week in the King's Bench Division, and ended in a verdict for the defendant surgeon. The plaintiffs were Mr. G. N. Abbott and Mrs. E. A. Abbott, his wife, and the defendant Mr. Charles Ryall. In October, 1908, the plaintiff, Mrs. Abbott, consulted her medical attendant, Dr. D. Fairweather, who was of the opinion that she was suffering from an internal tumour. After consultation with the defendant an operation was decided upon and was performed by him on Nov. 5th. The action was brought for damages for alleged negligence on the part of the defendant in its performance, the case for the plaintiff being that the defendant had left in the bowel after the operation a swab which he should not have left there; and secondly, that if he were justified in so leaving it, he had not informed those in attendance on his patient, of its presence or taken steps to ensure its ejection. After the operation Mrs. Abbott was able to go to Monaco at Christmas, returning home in March, and subsequently to that time suffered constantly from distension of the bowel, accompanied by severe pain and occasional vomiting. She was medically treated, and in October, 1909, consulted Mr. J. J. O'Donnell, who, according to his evidence, did not connect her condition with the operation, but coming to the conclusion that there was an obstruction prescribed large doses of olive oil, with the result that the swab was passed. With regard to the defendant's attitude on the finding of the swab being brought to his notice, there were attributed to him words implying denial of the use of the swab, which were eventually explained by him. Mrs. Abbott stated that at an interview with the defendant immediately after the passing of the swab he denied having inserted it, saying, when she asked who was responsible for it, "Oh, that is what we want to find out." It was also part of her case, as has been said, that he omitted to inform those present at the operation that it had been left in the bowel. Evidence on behalf of the plaintiffs was given by Mr. Russell Howard, speaking as an expert as to the use of a swab in such an operation, and as to the possible provision for its removal subsequently by tape attached to it. Mr. R. S. Dickson, Dr. Fairweather's partner, who had been present at the operation as anæsthetist, and Dr. Fairweather, who had acted in the capacity of dresser, described what they saw and denied any knowledge of the swab or the receipt of information from Mr. Ryall as to the leaving of it behind. These three witnesses, among other matters, were cross-examined as to the extreme gravity of the operation and of the conditions discovered by it, which they freely admitted, the last-named stating that the conditions found on opening the abdomen were "awful," that it was the worst operation he ever saw, and that it was a wonder that the patient should have survived it. Mr. O'Donnell gave evidence as to his treatment in October, 1909, and as to the condition of the patient then observed by him, admitting in cross-examination that she suffered much pain for some time after the swab had been got rid of, and that during this subsequent period there had been a recurrence of a "lump," the presence of a similar lump before the removal of the swab having been ascribed in the course of the case to it. Mr. O'Donnell also said, in answer to the defendant's counsel, that having heard the operation described, he was of opinion that

the leaving of the swab in the bowel was proper. The defendant, giving evidence, informed the jury that he advised the operation, and that when he commenced it only anticipated the presence of a fibrous tumour. Describing the operation, he deposed that on opening the abdomen he found more serious conditions than he expected. There were adhesions which rendered it a severe and dangerous operation, and a large tear in the bowel occurred. He took immediate steps to stop possible leakage by putting a swab in the bowel, when he proceeded to operate on the diseased parts. He also deposed that after the operation he told the nurse of the presence of the swab and of the necessity that it should be passed, and, further, that he was informed by her six days later that it had been passed. He was under the impression that Dr. Fairweather was aware of its presence, but he had not spoken of it to him. When he had an interview with Mr. Abbott in which the swab was spoken of he was under the impression that there had been an operation on Mrs. Abbott subsequently to the one which he had performed, whereas, although there had been one, it had preceded his by some years. On learning this from Mrs. Abbott next day, he referred to his notes and found the record of the leaving of the swab in the bowel and of the statement by the nurse that it had been passed. Having thus come to the conclusion that the swab was his he communicated with Mr. O'Donnell at once. On behalf of the defendant, evidence was given by Sir Alfred Fripp, Mr. W. E. Miles, and Mr. J. E. Lane, the last-named expressing the opinion that Mrs. Abbott had made a marvellous recovery after a very serious operation, and that Mr. Ryall, the defendant, had displayed great resource. Nurse Elizabeth Powell corroborated the evidence of Mr. Ryall as to his having informed her of the presence of the swab and as to the statement made by her afterwards in error to him. In summing up, Mr. Justice Phillimore directed the jury as to the law that it was for the surgeon to exercise reasonable skill and care, and that the absence of reasonable skill or care constituted negligence in the eye of the law. The burden of proof was on the plaintiffs, and they were not entitled to a verdict unless they had satisfied the jury that there had been a want of reasonable care or skill. After reviewing the evidence he left to the jury the following questions: 1. Was the defendant guilty of negligence by reason of his leaving the swab in the bowel? 2. Was he guilty of negligence by reason of his not informing sufficiently the persons in charge of Mrs. Abbott of its presence? 3. What damages had the plaintiffs sustained? The jury answered the two first questions in the negative, so that no reply was necessary to the third, and judgment was entered for the defendant with costs, a result upon which he is to be warmly congratulated, as is also the Medical Defence Union, which was responsible for the conduct of his case.

The Sale of Poisons under the Pharmacy Acts, 1868, 1908.

At the Lichfield county court recently the Pharmaceutical Society sued Mr. R. F. Jacks, a seedsman, for a penalty under Section 15 of the Pharmacy Act, 1868, for having sold nicotine contained in a compound known as "the XL.-all Vaporising Fumigator," contrary to the provisions of the Pharmacy Act, 1868, as amended by the Poisons and Pharmacy Act, 1908. The purchase upon which the action was founded was made by a witness, James Richardson, employed by the Pharmaceutical Society, who gave evidence that having purchased a bottle of the compound mentioned he found on examining it that there was no label on it with the name and address of the seller. The defendant admittedly had a licence under which he might lawfully sell the compound, under Section 2 of the Act of 1908, which, it will be remembered, provides for licences being granted by local authorities for the sale by nurserymen and others of poisons to be used exclusively in agriculture and horticulture. The essential facts of the case were in dispute, the serious suggestions being made that the defendant had not sold the bottle produced in evidence, as it differed from those kept in stock by him, or that the label had been deliberately removed with a view to legal proceedings being taken. Evidence was given by persons who had bought the compound in question from the defendant and by him that in their case the proper label had been on the bottles, and the defendant also gave evidence that to the best of his belief the bottle produced was not his and that he thought that he had none like it in stock. In addition to this, the point of law was taken that the proceedings should not have been under Section 15 of the Pharmacy Act of 1868, but under the new Act of 1908, under which he defendant held his licence to sell. In the latter case the proceedings would have been before magistrates in a court of summary jurisdiction, and not in a county court for the recovery of a penalty. The county court judge gave judgment for the defendant with costs on the higher scale, granting leave to the Pharmaceutical Society to appeal.

THE NEWEST GARDEN CITY.

IT does seem as if future generations may live to see the abandonment of what used to be called London. The City of London has been for some time no longer a place of residence. Fashionable squares of a century back have in many other districts been converted into tradesmen's premises, and old mansions have become tenement houses let to working men and poor people generally. The radius of four miles round Charing Cross is becoming too small; for some it is too dear; for others it no longer offers the desired amenities. Above all, new conceptions are gaining a firm hold on the more thoughtful householder. He begins to resent the endless payment of rent to enrich speculative builders. If his presence, the rent he is charged, the local trade he promotes by his purchases, enhance the value of land and houses in his district, he wants a share of the wealth he thus helps to create. Again, his better knowledge of the laws of health makes him long, especially if he has the care of children, to get away from noisy, dusty, crowded streets and close-packed houses. The garden city movement is born out of these awakening perceptions. The householder begins to see that he might get a very much better return for his rent. Of course, it has always been cheaper and more healthy to live away from town and out in the open, but this was until recently scarcely practical for those who were engaged in business. The garden city has only become a possibility since the recent and very vast improvements in local traffic. Taking London as an example, what with the "tubes" and the electrification of the District Railway people may live 12 and 15 miles away and yet reach their business office more quickly than when they were only at a distance of three or four miles, but had to travel by horse omnibus. Still, the full advantages of the new situation can only be obtained by coöperation. The solitary individual, with no other resources than his yearly earnings, remains helpless unless he acts in association with others. This bringing into association of intending householders for economic and sanitary purposes is the object of the garden cities.

The last, and also one of the best examples of this movement is the Ruislip Manor Garden City. This endeavour will, we hope, progress harmoniously, though for a beginning most persons concerned quarrel vigorously as to how the name should be pronounced. It appears that in spite of the reservoir and the small river Pinn on the estate the name has nothing to do with the French word for little stream of flowing water, *ruisseau qui ruisselle*, but is pronounced as if spelt Ryslip. This estate belongs to King's College, Cambridge. It is 15 miles from Charing Cross and can be reached in from 18 to 33 minutes from five London stations. It comprises 1300 acres, but the enterprise, known as Ruislip Manor, Limited, is not to be handicapped by having to purchase the whole of this land. The capital of the company now forming will be free for remunerative work, instead of being locked up, as is sometimes the case, by the purchase of land for which there is no immediate use. Therefore there will be money in hand to build drains, make roads, provide lighting, water, &c. It is only when one portion of the estate is thus satisfactorily occupied that another strip of land will be purchased. For 21 years the land will be reserved for the company to purchase. When the estate is fully developed it will hold a population of 30,000. There are to be 3556 houses not exceeding a rental of £30; 3541 under £60; 524 under £100; and 21 houses exceeding £100 annual rental. The area devoted to building plots will be 837 acres, to open spaces 255 acres, and to roads 184 acres. Every tenant will have a garden of his own. There will be public playgrounds and woods, while by careful planning every effort will be made to render the place picturesque. All this is rendered possible by the public-spirited action of the Provost and Fellows of King's College, Cambridge, for they

have consented to sell their estate on terms that involve the purchasers in the smallest possible financial responsibility. Then the Ruislip-Northwood urban and district council has promptly sought to apply the Housing and Town Planning Act of 1909 to this estate, so that it shall be in every respect a model garden city. On its side the company shows its public spirit by renouncing all claims to dividends above 5 per cent. Also the ultimate surplus assets, after repaying subscribed capital and a 10 per cent. bonus thereon, is to be devoted to the benefit of residents on the estate, by such action as the erection of public buildings. Finally, residents will have facilities afforded, if they desire, to purchase the freehold of the land on which their houses are built. Thus the tenants by contributing to create wealth will have the satisfaction of sharing in the benefits that thus accrue. After the capital which renders the venture possible has earned an interest of 5 per cent., all further benefits will be spent as committees representing the residents may deem most agreeable to the inhabitants. So the latter are likely to obtain a large share in the prosperity they create.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

A QUARTERLY meeting of the Council was held on Jan. 12th, Mr. BUTLIN, the President, being in the chair.

The PRESIDENT reported the death, on Dec. 12th, 1910, of Professor Franz König of Berlin, an honorary Fellow of the College, and he stated that he had written to express the sympathy and condolence of the Council with the members of the family.

The Council congratulated Sir Frederick Eve on being knighted.

The Council elected Mr. H. J. Waring a member of the Court of Examiners.

It was resolved to purchase an epidiascope with a complete outfit from Carl Zeiss, Limited.

A report was received from the Museum Committee on proposals for re-arranging the pathological collection and for providing additional accommodation for the display of specimens, including the new medico-legal collection. The report was referred to a joint meeting of the Museum and the Finance Committees.

Mr. Edmund Owen was nominated as a representative of the College to serve on the Council of Queen Victoria's Jubilee Institute for Nurses for three years from March 1st, 1911.

A letter was read from the University of St. Andrews inviting the Council to send a delegate to take part in the celebration of the 500th anniversary of the foundation of the University, which is to take place from Dec. 12th to 15th next. The President was appointed the delegate.

A letter was read from the medical secretary of the British Medical Association forwarding a copy of the following resolution adopted by the Council of the Association with a request that it might receive the consideration of the Council of the College:—

> That it is desirable that diagnosis and treatment of diseases of the eye, including the estimation of refractive errors and retinoscopy, should be compulsory subjects in every medical curriculum, and that every student should undergo a practical examination therein.

The letter was referred to the Committee of Management.

RAG FLOCK.—At a deputation received by Mr. Burns, President of the Local Government Board, on Jan. 13th, the importance of sterilising the raw materials used in the making of rag flock was urged upon his notice by several manufacturers. Mr. Burns expressed the opinion that no amount of sterilisation could render innocuous certain materials which he had himself seen. His view was that washing would probably remove nine-tenths of the objectionable elements. He advised the sections of the trade who on the one hand favoured washing and on the other sterilisation to come to some agreement in the matter and work out for themselves a practical method and standard.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 8394 births and 5101 deaths were registered during the week ending Jan. 14th. The annual rate of mortality in these towns, which had been equal to 14·1 and 14·3 per 1000 in the two preceding weeks, further rose to 15·5 in the week under notice. During the 13 weeks of last quarter the death-rates in these towns averaged 14·7 per 1000, against 14·8 and 14·3 in the corresponding quarters of 1908 and 1909. In London the annual death-rate last quarter was equal to 15·3 per 1000, against 13·7 and 13·5 in the two preceding corresponding quarters. The annual death-rates in the 77 towns during last week ranged from 3·6 in Hornsey, 5·9 in King's Norton, 7·6 in Leicester, and 8·4 in Aston Manor, to 21·8 in Bootle, 23·3 in Merthyr Tydfil, 24·2 in Grimsby, and 26·2 in Rotherham. The 5101 deaths from all causes in the 77 towns last week showed a further increase of 389 on the numbers in the two preceding weeks, and included 448 which were referred to the principal epidemic diseases, against 442, 391, and 392 in the three preceding weeks; of these 448 deaths from epidemic diseases, 191 resulted from measles, 87 from whooping-cough, 56 (of infants under two years of age) from diarrhœa and enteritis, 63 from diphtheria, 31 from scarlet fever, and 20 from enteric fever, but not one from small-pox. The fatal cases of measles, which had been 208, 185, and 160 in the three preceding weeks, rose again last week to 191, and caused the highest annual rates, 1·7 in West Ham, 1·8 in Tynemouth, 3·1 in Rotherham, and 3·2 in Sheffield. The 87 deaths from whooping-cough showed an increase of 34 upon the number in the previous week, and were proportionally most numerous in York and Rotherham. The deaths referred to diphtheria, which had been 55 and 76 in the two preceding weeks, declined again to 63 last week; they included 23 in London and its suburban districts, and 3 both in Bristol and in Leeds. The 56 deaths of infants under two years from diarrhœa and enteritis were within one of the number in the previous week; 16 occurred in London, 10 in Manchester and Salford, 7 in Liverpool and Bootle, and 4 in Rhondda. The fatal cases of scarlet fever, which had been 21 and 22 in the two previous weeks, rose to 31 last week, of which 8 were returned in London and its suburban districts, 6 in Liverpool, 3 in Manchester and Salford, and 3 in Bolton. The 20 deaths referred to enteric fever showed a further decline from the numbers in the two previous weeks, and included 5 in London, and 2 each in Derby, Wigan, Sheffield, and Rhondda. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had steadily declined in the nine preceding weeks from 1882 to 1491, had further fallen to 1410 on Saturday last; 135 new cases of this disease were admitted to these hospitals during the week, against 140 and 154 in the two previous weeks. These hospitals also contained on Saturday last 838 cases of diphtheria, 205 of measles, 116 of whooping-cough, and 73 of enteric fever. The 1435 deaths from all causes in London last week (an increase of 107 on the number in the previous week) included 292 which were referred to diseases of the respiratory system, against 263 and 289 in the two preceding weeks. In the 77 towns 180 deaths resulted from different forms of violence, corresponding with the number in the previous week; and 433 inquest cases were registered. The causes of 56, or 1·1 per cent., of the deaths registered during the week in the 77 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London and in each of its eight suburban districts, in Bristol, Bradford, Newcastle-on-Tyne, Nottingham, Salford, Cardiff, and in 38 other smaller towns; the 56 uncertified causes of death in the 77 towns last week included 7 in Liverpool, 6 in Birmingham, 6 in St. Helens, 5 in Preston, and 3 each in Sunderland, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 889 births and 611 deaths were registered during the week ending Jan. 14th. The annual rate of mortality in these towns, which had been equal to 14·7 and 14·3 in the two previous weeks, rose to 16·6 in the week under notice. During

the 13 weeks of last quarter the death-rates in these towns averaged 14·8 per 1000, only slightly exceeding the mean rate during the same period in the 77 English towns which was 14·7 per 1000. The annual death-rates during last week in the eight Scotch towns ranged from 13·7 and 14·6 in Paisley and Edinburgh to 20·4 and 27·7 in Greenock and Perth. The 611 deaths from all causes in the eight towns last week showed an increase of 85 on the number in the previous week, and included 51 which were referred to the principal epidemic diseases, against 40, 43, and 56 in the three preceding weeks; these 51 deaths were equal to an annual rate of 1·4 per 1000, the highest epidemic rates being 2·7 in Dundee and 4·2 in Perth. Of these 51 deaths from epidemic diseases 18 resulted from whooping-cough, 13 from diarrhœa, 9 from diphtheria, 5 from scarlet fever, and 3 both from enteric fever and measles, but not one from small-pox. The fatal cases of whooping-cough, which had been 7 and 20 in the two previous weeks, declined to 18 last week, of which 9 occurred in Glasgow, 5 in Dundee, and 3 in Leith. The 13 deaths attributed to diarrhœa included 8 of infants under two years of age; 5 deaths from this cause occurred in Glasgow and 3 in Dundee. The 9 deaths referred to diphtheria showed a decline of 5 from the number in the previous week, and included 3 in Glasgow and 2 in Perth. The 5 fatal cases of scarlet fever were within one of the number in the previous week; 2 were returned both in Glasgow and in Edinburgh. Two deaths both from enteric fever and measles also occurred in Glasgow, and 1 each from those diseases in Edinburgh. The deaths in the eight towns referred to diseases of the respiratory system, which had been 92 and 98 in the two preceding weeks, further increased to 130 last week, but were 2 below the number in the corresponding week of last year. The deaths resulting from different forms of violence in the eight towns were 26 last week, against 17 and 19 in the two preceding weeks; and 200, or 33 per cent., occurred in public institutions. The causes of 21, or 3·4 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 largest English towns the proportion of uncertified causes of death last week did not exceed 1·1 per cent.

HEALTH OF IRISH TOWNS.

In Dublin 230 births and 167 deaths were registered during the week ending Jan. 14th. The annual rate of mortality in the city, which had been equal to 18·9 and 21·5 per 1000 in the two preceding weeks, declined again to 21·4 in the week under notice. During the 13 weeks of last quarter the annual death-rate in the city averaged 19·8 per 1000, whereas in London the death-rate during the same period did not exceed 15·3 per 1000. The 167 deaths from all causes in Dublin last week were within one of the number in the previous week, and included 15 which were referred to the principal epidemic diseases, of which 5 resulted from whooping-cough, 4 (of infants under two years of age) from diarrhœa and enteritis, 3 from measles, 2 from diphtheria, and 1 from enteric fever, but not one either from scarlet fever or small-pox. The fatal cases both of whooping-cough and measles showed a slight decline from those in the previous week. The deaths from all causes included 40 of infants under one year of age, and 38 of persons aged upwards of 65 years; 68, or 41 per cent., of the deaths were recorded in public institutions. The causes of 5, or 3·0 per cent., of the deaths in the city during the week were not certified either by a registered medical practitioner or by a coroner. In Belfast 231 births and 151 deaths were registered during last week. The 151 deaths in this city were equal to an annual rate of 19·8 per 1000, against 12·1 and 16·0 in the two preceding weeks. During the 13 weeks of last quarter the annual death-rate in Belfast was equal to 16·0 per 1000, against 19·8 in Dublin during the same period. The 151 deaths from all causes in this city during last week included but one resulting from any of the principal epidemic diseases—namely, a fatal case of scarlet fever; no fatal case of measles, diphtheria, whooping-cough, enteric fever, diarrhœa, or small-pox was registered. Six deaths resulted from different forms of violence; 12 were registered on the information of the coroner, and 50, or 33 per cent., occurred in public institutions. The causes of all the 151 deaths in the city last week were duly certified either by a registered medical practitioner or by a coroner.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Fleet-Surgeon George Welch has been promoted to the rank of Deputy Inspector-General of Hospitals and Fleets in His Majesty's Fleet (dated Dec. 7th, 1910).

The following appointments have been notified:—Fleet-Surgeons: E. F. Mortimer to the *Bellerophon*, on recommissioning; S. H. Birt to the *Carnarvon*; W. G. Axford to the *Good Hope*, on commissioning; and E. Cooper to Queensferry Sick Quarters. Staff-Surgeon: A. X. Lavertine to the *Defence*, on recommissioning. Surgeon: R. J. G. Parnell to the *Victory*, additional, for disposal.

ROYAL ARMY MEDICAL CORPS.

Colonel M. J. Kerin, C.B., officiating principal medical officer of the Seventh (Meerut) Division, has taken over the duties of Principal Medical Officer of the Bareilly, Garhwal, and Dehra Dun Brigades on the return of Colonel F. B. Maclean from leave. Lieutenant-Colonel J. Maher, from Potchefstroom, has taken over Medical Charge of Queen Alexandra's Military Hospital, Grosvenor-road, London. Lieutenant-Colonel E. J. E. Risk has been transferred from Belfast to the London District. Lieutenant-Colonel W. J. Baker has joined for duty at Cairo. Lieutenant-Colonel M. T. Yarr, medical inspector of recruits in the Scottish Command, has been granted 61 days' leave with permission to travel in France, Switzerland, and Italy. Lieutenant-Colonel R. H. Hall has taken over the duties of Senior Medical Officer at Bermuda. Major S. Macdonald, on arrival from Hong-Kong, has been appointed Recruiting Medical Officer to the London District. Major C. H. Hale, D.S.O., has embarked in the transport s.s. *Rewa* for a tour of duty in India. Major C. R. Elliott, sanitary officer, Third (Lahore) Division, has been transferred from Dalhousie to Lahore. Major L. P. More, staff officer for medical mobilisation stores, Second (Rawalpindi) Division, has been granted two months' combined leave home from India. Major W. Hallaran from the London District, has taken up duty at Lahore. Major F. J. W. Porter, D.S.O., recruiting medical officer, London District, has been transferred to the Southern Command. Major A. E. Smithson from Harrismith has joined for duty at Wynberg. Major A. C. Fox has returned to Tientsin on completion of his leave. Major P. J. Probyn, D.S.O., has arrived home from Hong-Kong. Captain J. B. Clarke has arrived home on duty from West Africa. Captain W. F. Tyndale, C.M.G., has taken over duty at the Royal Infirmary, Dublin. Captain W. C. Croly, Captain F. W. Lambelle, and Captain J. E. Gatt have embarked for a tour of service in India on the transport s.s. *Rewa*. Captain R. G. H. Tate, in charge of the Brigade Laboratory at Ambala, has been appointed a Specialist in the Prevention of Disease. Captain A. D. Jameson, specialist in venereal diseases and dermatology to the Aldershot Command, has been granted one month's leave of absence. Captain C. H. Turner has arrived home, tour-expired, from India. Captain W. F. H. Vaughan, on return to duty from sick leave, has been posted to the Scottish Command. Captain H. J. Crossley has been transferred from York to Richmond (Yorkshire). Captain M. C. Wetherell, from Meerut, has joined the station hospital, Sialkot, for duty. Captain R. P. Lewis, from Bloemfontein, has taken up duty at Wynberg. Captain A. C. Osburn, from Sheerness, has been appointed to Colchester. Lieutenant C. M. Nichol, from Colchester, has taken over medical charge of the troops and their families at Ipswich, in succession to Captain W. Croly. Lieutenant G. O. Chambers has been posted to the Northern Command. Lieutenant J. S. McCombe has been transferred from Bangalore to Malapuram. Lieutenant T. B. Nicholls, from Tidworth, has taken up duty in Egypt. Lieutenant H. G. Robertson, from Richmond, has joined at Sheffield. Lieutenant J. K. Gaunt, Lieutenant E. L. Fyffe, and Lieutenant T. J. Hallinan have been posted to the Irish Command.

INDIAN MEDICAL SERVICE.

Colonel C. H. Beatson, C.B., Principal Medical Officer, First (Peshawar) Division, has arrived home on leave from India. The services of Lieutenant-Colonel D. St. J. D. Grant, Bengal, have been placed by the Government of India at the disposal of the Commander-in-Chief. Major G. Melville has taken over the appointment of Professor

of Materia Medica at the Medical College, Lahore, relieving Captain A. C. MacGilchrist, whose services have been replaced at the disposal of the Home Department of the Government of India. Major A. Leventon, civil surgeon of Lakhimpur, has been appointed Civil Surgeon at Darrang, Eastern Bengal. Major J. Fisher has taken over duty as Residency Surgeon at Jaipur from Lieutenant-Colonel W. H. B. Robinson. The services of Major W. D. Hayward, civil surgeon of Jaipajuri, Bengal, have been placed permanently at the disposal of the Army Department. Major P. Dee, Madras, has received two months' extension of leave of absence from India on medical certificate. Captain J. C. S. Oxley and Captain R. S. Kennedy have arrived home from India on leave. The services of Captain T. T. Owen have been placed at the disposal of the Government of Burma. Captain C. Dykes, on return from leave, has been appointed Civil Surgeon at Jaunpur. Captain S. H. Lee-Abbott, from Dalhousie, has been posted as Civil Surgeon to Ferozopore. Captain A. K. Lauddie, civil surgeon of Dera Ghazi Khan, has been granted 16½ months' privilege leave combined with furlough. The Lieutenant-Governor of the Punjab has made the following appointments: Captain M. Dalziel, superintendent of the Central Jail, Multan, posted to Multan, on return from combined leave, relieving Captain W. T. Finlayson. Captain W. T. Finlayson, superintendent of the District and Female Jails, Lahore, posted to Lahore, relieving Captain R. A. Chambers. Captain E. D. W. Greig has been appointed to officiate as Director of the Central Research Institute at Kasauli during the absence of Sir David Semple.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Captain Jonathan Clerke to be Major (dated Jan. 11th, 1911). James Oliver Hamilton to be Lieutenant (on probation) (dated Nov. 9th, 1910).

TERRITORIAL FORCE.

Colonel Philip E. Hill, administrative medical officer of the Welsh Territorial Division, resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated Jan. 18th, 1911).

Royal Army Medical Corps.

3rd South Midland Field Ambulance, Royal Army Medical Corps: Charles Ferrier Walters (late Quartermaster and Honorary Lieutenant, 2nd Southern General Hospital) to be Lieutenant (dated Jan. 18th, 1911).

2nd Southern General Hospital, Royal Army Medical Corps: Quartermaster and Honorary Lieutenant Charles F. Walters resigns his commission (dated Jan. 18th, 1911).

For attachment to Units other than Medical Units.—James Andrew Simpson to be Lieutenant (dated Oct. 12th, 1910). Captain James King Patrick, from the 2nd Lowland Field Ambulance, Royal Army Medical Corps, to be Captain (dated Nov. 18th, 1910). Christopher Francis Murphy to be Lieutenant (dated Nov. 29th, 1910).

Attached to Units other than Medical Units.—Captain (Honorary Captain in the Army) James C. G. Macnab resigns his commission (dated Jan. 18th, 1911).

THE NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund held on Jan. 10th, Sir J. N. Dick, K.C.B., being in the chair, the sum of £50 was distributed among the several applicants.

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE RESERVE.

The regulations for this service, which have just been issued, state that the Reserve has been formed for the purpose of supplementing the staff of Queen Alexandra's Royal Naval Nursing Service during naval warfare on a large scale. The Director-General of the Medical Department of the Navy will be responsible for the administration and 250 nurses will be employed. This number may, however, be augmented in case of necessity during hostilities.

DEATHS IN THE SERVICES.

Fleet-Surgeon James Macdonald Rogers, R.N., of the *Orontes*, recently at Malta. He entered the service as a surgeon in 1884, and became fleet-surgeon in 1900. In that year he was awarded he Sir Gilbert Blane gold navy medal.

Deputy Inspector-General of Hospitals and Fleets Matthew Coates, R.N., at his residence at Dawlish on Jan. 13th. He entered the service as surgeon in 1859, became staff-surgeon in 1871 and fleet-surgeon in 1882, in which year he retired with the rank of deputy inspector-general.

Correspondence.

"Audi alteram partem."

INTERNATIONAL HYGIENE EXHIBITION AT DRESDEN: AN APPEAL.

To the Editor of THE LANCET.

SIR,—In the month of May of this year a great exhibition will be opened in Dresden, at which a complete record of the achievement of hygiene from the earliest times up to the present day will be laid before the eyes of the public. Advance will be stimulated by means of over 200 conferences and congresses, and every nation of importance will take part in the endeavour to improve the conditions of mankind.

Since the Government, acting on the advice of the Board of Trade, has decided not to take an official part in this undertaking, there is a grave danger that Great Britain, the admitted leader in hygiene, may be the only nation of importance which is not represented. To save this country from such a disastrous occurrence the vice-presidents of the British Executive Committee, together with a number of men eminent in the world of science, have issued an appeal letter asking for the sum of £10,000. Within a week of the issue of this appeal upwards of £2000 have been subscribed or guaranteed. Sums of 5*s.* (from a "Lover of Peace and Goodwill") up to £100 (from the Corporation of Glasgow) have been received, and guarantees of from £1 to £300 have been given. A very generous offer has been made by Mr. Joseph Rowntree. His family will give £500 if nine others will come forward with at least an equal amount.

With confidence we turn to your readers to save Great Britain from having to hang her head in shame. The world has a right to expect this country to take a prominent part in this friendly international endeavour. The exhibition in Dresden must not be compared with ordinary industrial and "side-show" exhibitions. It will be a vast museum and school, where every legitimate means will be employed in order that its scientific, humanitarian, and educational purposes may be fulfilled. Time is short. The Administration in Dresden asked for a definite reply by the 15th of this month, but has granted an extension.

Subscriptions, both large and small, will be gratefully acknowledged if addressed to the secretary. Cheques should be made payable to the Right Hon. Lord Ilkeston.

We are, Sir, your obedient servants,

THOMAS BARLOW, Chairman.
ILKESTON, Hon. Treasurer.
H. W. ARMIT, Secretary.

47, Victoria-street, Westminster, S.W.

A RETROGRADE STEP IN DEATH REGISTRATION.

To the Editor of THE LANCET.

SIR,—With something akin to a flourish of trumpets, the Registrars-General for the three divisions of the United Kingdom announce, in the first of their Weekly Returns for 1911, that, among other changes, the International List, or Classification, of Causes of Death has been adopted in their several reports.

At the first glance, and from the medical statistician's point of view, this change seems to be a proper and a useful one. But let us look into the matter a little more closely, and from a sanitary standpoint, and the glamour fades. In the modified list "cerebro-spinal fever" takes its place among "other diseases of the nervous system"; "pneumonia" (which, by the way, is advancing by leaps and bounds into the first rank of "the ministers of death") is grouped with "other diseases of the respiratory system"; "diarrhœa

and enteritis," which demand "more than a human hecatomb" from child life every week in the late summer and early autumn year by year, are bracketed with "other diseases of the digestive system"; while "puerperal fever (septicæmia), &c.," are followed by "other causes incident to childbirth."

Now, it will be observed that every one of these diseases undoubtedly belongs to the class of the acute infections, and the infecting agent in the first two of them, at all events, has long since been identified and isolated. And even in the case of summer diarrhœa the active part played by Shiga's bacillus as a causative agent can hardly be questioned at the present day. Further, is not "puerperal fever" universally acknowledged to be due to sepsis caused by sapræmia or septicæmia—forms of toxæmia which in the International List are grouped with tetanus and tuberculosis? Surely small-pox, measles, and scarlatina might just as well be included with "diseases of the skin and cellular tissue," or influenza, diphtheria, and "croup" (which last term should be expunged from any scientific list of diseases) with "diseases of the respiratory system," or enteric fever with "diseases of the digestive system." "Typhus," again, has disappeared from the International List as printed in the English Weekly Return, but it has very properly been retained among "other epidemic diseases" by the Registrar-General for Ireland.

The point, however, which I wish in particular to make is that the transference of such unquestioned acute infections as cerebro-spinal fever, pneumonia, diarrhœa, and puerperal fever from their rightful position under the heading "epidemic diseases," places a formidable stumbling-block in the path of sanitary reformers and medical officers of health. The hands of the State Medicine clock are being put back a quarter of a century at least—to pre-notification days. For when sanitary authorities are asked to add such and such a disease to the schedule of the Notification and Prevention of Infectious Diseases Acts, they will answer: "Oh! the Registrar-General holds that this disease is one of the respiratory system, that other is an affection of the digestive system."

In Ireland on March 31st, 1910, the provisions of the Infectious Disease Notification Act of 1889 had been adopted in 142 out of 158 rural districts, and in 83 out of 95 urban districts. Throughout Great Britain the Act has long since been in force. Writing as a resident in Ireland, I cannot but regard with concern a modification in the list of causes of death which will probably delay (for it cannot ultimately prevent) the including among notifiable diseases under an Act which is now almost universally adopted in the United Kingdom of such death-dealing, yet preventable, maladies as pneumonic fever and epidemic diarrhœa.

I am, Sir, yours faithfully,

JOHN W. MOORE, M.A., M.D., D.P.H.

Dublin, Jan. 16th, 1911. (1871) Dub., F.R.C.P. Irel.

ABBOTT AND WIFE *v.* RYALL.

To the Editor of THE LANCET.

SIR,—I have seen a cutting from one of the morning papers misrepresenting the answers given to certain questions put to me in a law court last week. My object in writing to you is to make it clear that in my answers the word "anxiety" was only employed in relation to the giving of "instructions" (for after-treatment and observations of results) to "subordinates."

The case was an important one for our profession, and one of the chief points upon which it turned (*vide* the summing-up) was the matter of the instructions given by the doctors to the nurses, and the deductions made by them from the report of the nurses as to the result of the carrying out of those instructions. I was in the witness box more than half an hour, being examined, cross-examined, re-examined, and then questioned by the judge. The two reports which I have seen were brief epitomes. That in the *Times* is a fair one, and demonstrates that that reporter clearly understood the matter in question to be one of "instructions" given by a surgeon to a nurse—his nurse—the nurse he had taken to the case. The word essential to the proper understanding of the questions and answers with which this note is concerned is "subordinate."

I was asked whether "the surgeon would before leaving the case give *instructions* to his *subordinate*," and I replied "Yes." Then to a further question, of detail as to examining and reporting the result of an enema given with the intention of bringing away the swab from the bowel, I said, "As this case shows that is one of our greatest anxieties." And with this statement surely everybody who is used to the after-care of abdominal operations will agree.

I ask you to publish this explanation in case any of your readers may have seen only the second, the unfair and misleading, epitome to which I refer at the beginning of this letter; for in attempting to boil down into one the many questions and answers upon a technical point it misses entirely the matter at issue; and, what is far worse, it at the same time insults my profession and myself by substituting for the word "subordinate" the words "patient's medical adviser."

That this substitution was effected by some reporter who is quite incapable of conveying, even if he can grasp, the technical points involved in the evidence is proved by his senseless jumbling of terms in the preceding paragraph.

I am, Sir, yours faithfully,

Jan. 17th, 1911. ALFRED D. FRIPP.

A METHOD OF SERUM DIAGNOSIS FOR TUBERCLE.

To the Editor of THE LANCET.

SIR,—The object of my letter with regard to Captain V. B. Nesfield's communication on the serum diagnosis of tubercle was to point out that practically all persons—adults especially—have in their blood antibodies to the tubercle bacillus, and that, therefore, any method of diagnosis must be an accurate quantitative one. It is not a question of presence or absence, but of more or less. I believe I have found such a method by the application of a new principle—i.e., the estimation of the time in which complement absorption takes place with an emulsion of bacteria of definite strength under standard conditions. The process is simple and easy in execution, gives exact results, and is available for all cultivable organisms (though I have only used it at present for tubercle and typhoid), and I think it will be found of great clinical value as affording the simplest method for the application of the Bordet-Gengou reaction in diagnosis.

Captain Nesfield's method of gauging the strength of the emulsion by the appearance (i.e., by guess) is entirely inadequate where quantitative work is to be undertaken. For opsonic work it is different, for here a normal control is used in every case; and even here the careful worker will endeavour, by means of an orientating test, to get his emulsion as uniform as possible on each occasion. In a preliminary communication such as I was making I did not think it necessary to go into details, nor do I now; I may remark, however, that my standard emulsion is carefully sterilised, so that no "short, broad bacillus" can make its appearance, and that controls have been made to show that the disappearance of the complement is really due to specific absorption and not to destruction at the incubator temperature, which does not take place for a much longer period.

I have determined the amount of complement in the serum in a considerable number of cases by an accurate method, and have as yet found no connexion between the figures thus obtained, the amount of antibodies (as determined by the absorption time), and the opsonic index. The question as to whether free complement exists in the circulating blood or not has formed, as any of your readers who are interested in the study of immunity will know, one of the important controversies arising out of the subject, and Captain Nesfield will find an outline of the more important facts bearing on the dispute in my book on Immunity and Specific Therapy, where three pages are devoted to this question. I have also mentioned the fact that opsonin is absorbed along with complement in the Bordet-Gengou reaction, which I thought was now well known.

Captain Nesfield makes numerous definite statements which are entirely unjustified in the present state of our knowledge of the subject—for instance, that a patient suffering from tubercle must constantly be losing complement from intravascular deviation. There is no evidence that this ever occurs, and we should not expect it to do so if there is no free complement in the plasma. Again, he says that an excessive dose of tuberculin would probably reduce the complement in the blood and be a source of danger. I am aware that some

observers have found a diminution of the complement in the serum during anaphylactic shock, but this is not generally accepted, and even during a severe tuberculin reaction I have not found the amount reduced. Even if it were, there is no proof that it would be harmful. In my own measurements of the amount of complement in the different conditions I have found no relation whatever between the amount and the severity of the disease or any clinical indication. Lastly, he says that a falling opsonic index would at once show this and indicate danger. I am not prepared to say that there is no connexion between the opsonic index and the amount of complement, but if there is it is quite certain that it may be masked by other factors, and that a high index does not necessarily mean a large amount of complement, or *vice versâ*.

In conclusion, may I point out that all hæmolytic observations on Hecht's method are liable to be vitiated by the fact that the amount of amboceptor is subject to variations, as yet unmeasured, and that this, as well as the variation in the amount of complement (which can be measured easily), renders accurate work impossible, or at least arduous in the extreme?

I am, Sir, yours faithfully.

Jan. 16th, 1911. W. D'ESTE EMERY.

RECENT VIEWS AS TO THE MECHANISM OF ANTISTAPHYLOCOCCAL DEFENCE.

To the Editor of THE LANCET.

SIR,—Amid so much that was interesting in Dr. F. W. Andrewes's Croonian lectures[1] it was disappointing to find how little attention the lecturer gave to the medical aspect of his subject. He told us that the new facts prove the immense importance of phagocytosis in pyogenic, and its lesser importance in non-pyogenic, infections; but, apart from this, I hardly remember a single practical application he has made of his discoveries. He has certainly not applied them to the solution of any of the more thorny problems which vex the practitioner in his daily association with infectious ailments. Perhaps, considering the nature of Dr. Andrewes's work, it could not well have been otherwise. In artificial infections local inflammations are much less prominent than they are in natural illness. To the intravenous inoculator of rabbits an infection comes to be little more than a useful starting point for a circulatory leucocytosis, whose source and fluctuations are to be examined in detail, but whose destination in the actual conflict with the bacteria may be left in a convenient vagueness. To the clinician, however, the sole interest of such researches lies in the light which they shed upon disease; nor, allowing for the extreme looseness of the parallel, is there any reason why the phenomena of animal infection should not be utilised for the purpose of illustrating human pathology. Looking at the experiments in this rather utilitarian way, I wish to consider how views which I outlined in a letter to THE LANCET of June 25th last are affected by Dr. Andrewes's and other recent work.

Let me recall that to Dr. Andrewes, as to most present-day authors, the main defence in staphylococcal infections is phagocytosis, while my letter was designed to show that in the furuncular group the chief danger, that from the spread of the local inflammation, is probably combated by antitoxis. In the first place, were leucocytes the chief defence in carbuncle we should expect a gradual arrest of the complaint, as they gradually got the upper hand of the bacteria. The fact that expansion goes on with no apparent diminution of rapidity suggests rather a new force brought suddenly to bear than the final effort of an agent that had been slowly wearing down the bacterial attack. Moreover, the time at which arrest takes place, some days at least from the onset, agrees well with the time required for the preparation of an antitoxic, and not so well with that required for the institution of a phagocytic, defence. Not only as regards defensive preparation, but still more from the point of view of the relative strength of the opposed forces, the time of arrest is unfavourable to the phagocytic theory. As there must be during the expansion of a carbuncle the same constantly increasing proportion of bacteria and toxins to defending leucocytes as I have pointed out there is to defending tissues, arrest ought upon that theory to take place at the very beginning of the trouble, when defence is relatively strong in comparison with the attack, and not, as it actually does, at a stage when things are most favourable to the invading bacteria. Further, the likelihood of the leucocytes contributing materially to arrest will be the smaller the larger, we suppose, the number of them to be that are present in the first stage of carbuncle. A small leucocytosis might be thought insufficient to kill the bacteria. A large one would indicate the breakdown of the phagocytic defence in circumstances that were well suited to its effective exercise. On the evidence hitherto available one had imagined the number to be comparatively small. The relatively mild symptoms, the contrast, so much more marked than the common descriptions imply, between the characters of the swelling in the earlier and in the later stage, the kind of juice which can be squeezed from the section, all pointed to the probability of a rather small leucocytosis. Dr. Andrewes's experiments, however, suggesting a large early circulatory leucocytosis, make it almost certain that the part taken by leucocytes in the constitution of the early swelling of carbuncle is a large one, and so far are unfavourable to the phagocytic theory. Significant, too, in the present connexion is the recent surgical reaction against the theory, due partly to the disappointing results of the vaccination treatment, partly to a growing conviction as to the enormous anti-bacterial powers of the healthy tissues. The immunising functions of the leucocytes are now admitted to have been a good deal exaggerated, and to be still very imperfectly understood. Basing upon clinical experience, as the only safeguard against the like errors in future, we have to look for a theory which shall at once meet the difficulties I have enumerated, and escape a still more fatal objection to the current phagocytic doctrine to which I will come presently.

Obvious as are the above considerations, the force of some of them would clearly be lessened, were it permissible to regard the nascent leucocyte as having a higher defensive value than the ordinary circulatory one. The leucocytes formed in connexion with the bone-marrow changes, which occur some days after infection, might then be credited with an arrestive power which the first arrivals at the inflamed focus were without. While it is possible that in carbuncle such a higher arrestive power is actually exerted by the later-formed leucocytes, observation of the course of the complaint makes it extremely unlikely that the mode of arrest is phagocytic. Though no one has hitherto paid any attention to the facts tending to show the existence and successive neutralisation in carbuncle of at least two toxins, both the facts themselves and their bearing on the doctrine of immunity are sufficiently plain. The ultimate reason, which bars the phagocytic theory, is the circumstance that, under normal conditions—i.e., in carbuncle occurring in otherwise fairly healthy persons without complications—constitutional symptoms are met with chiefly in the period extending from arrest of the complaint onwards. The notion that we have to do with only one toxin will therefore imply that it can exert a disorganising effect on the tissues, when present in quantity, which produces little or no constitutional disturbance, and be without power to cause local damage, when in quantity capable of causing general symptoms of a quite noticeable order. Allowing then that an idea which involves an absurdity must itself be absurd, we seem driven to the alternative of admitting the toxic duality. But if in carbuncle two poisons are successively got rid of, clearly the neutralisation of the first cannot have been due to phagocytosis, for in that case the second must have ceased to be produced. In a word, the continued operation of the constitutional poison long after the tissue-destroyer has ceased to give trouble is a fairly obvious indication that the latter has been neutralised by an antitoxin.

Those who have had practical experience of infectious ailments will usually have no difficulty in admitting, as the preceding argument requires us to admit, that the constitutional symptoms of carbuncle are really toxic in character. In medicine, however, there are many different view points, and we read in the Croonian lectures without any surprise that the "chief clinical symptoms of infective disease depend on the work of defence." Dr. Andrewes nowhere says upon what particular defensive work they depend, but the plain inference is that it is the leucocytosis. There is nothing else in his analysis of the factors of immunity with

[1] Croonian Lectures on the Behaviour of the Leucocytes in Infection and Immunity delivered before the Royal College of Physicians of London by Dr. F. W. Andrewes, THE LANCET, June 25th (p. 1737), July 2nd (p. 8), 9th (p. 83), and 16th (p. 153), 1910.

which it is possible to connect them. First, then, as regards a possible relation of the symptoms to a circulatory leucocytosis, it is perhaps sufficient to say that there is a good deal of evidence against, and none at all in favour of, the idea. The facts bearing on the subject are detailed in the lectures, and it would be idle to repeat them here. They make it probable that in a good many infections the symptoms are due to a circulatory leucopenia and wholly impossible to treat seriously the suggestion that in carbuncle they may result from the opposite condition. There remains the question of their possible connexion with the local leucocytosis. No one, of course, doubts that the local symptoms of inflammatory complaints are due largely to local tension. The point is whether the general ones are similarly determined. Can we regard the fever, chills, sickness, faintness, malaise, and so forth, as resulting from the local accumulation of leucocytes? We have it on the best authority that tension alone will cause rise of temperature, but we are dealing in carbuncle with a very different condition from that of an aseptic wound with confined discharges. We have, on the one hand, the symptoms I have just mentioned, and, on the other, a sore teeming with bacteria and their toxins. Is it more reasonable to suppose that these are related as effects and cause, or that they have no relation to one another at all, and that the source of the symptoms is a tension caused by leucocytes which have been brought to the part for no other reason except as a defence against the bacteria? The inquiry seems to admit of only one answer, unless we are to form a very different idea of nature's therapeutic methods from any that has been hitherto entertained. It may be added that in carbuncle the greatest intensity of the symptoms does not correspond very accurately with the maximum tension. The symptoms are often most marked after the tension has been somewhat relieved—a fact which in another respect favours the intoxication notion. When the extreme pressure on the absorbents and capillaries is relieved the poisons will be more freely taken up.

Closely connected with Dr. Andrewes's symptomatology is his statement that the pyococci do not form soluble toxins. In my June letter I assume that the poison of carbuncle is not very readily absorbed, but have never thought of it as either a solid or as remaining inside the bacteria, in the manner apparently imagined by Dr. Andrewes. On the latter view we should have to assume the intra-bacterial neutralisation of a toxin, which had exerted extremely powerful extra-bacterial effects, an idea which, though savouring of the "transcendental pseudo-chemistry," which Dr. Andrewes denounces, might perhaps be admitted. But a more serious difficulty presents itself as to how the bacteria are to get through the immense accumulation of leucocytes in order to produce the late constitutional symptoms of carbuncle. It has been alleged that in the great destruction of tissue which often takes place the bacteria may enter the ends of severed blood-vessels; but this, while it certainly occurs at times, seems insufficient as a general explanation. What Dr. Andrewes says as to fluctuations in the later systemic leucocytosis is of interest in relation to the question of the solubility of the toxins. The fluctuations receive no explanation on his theory of chemiotaxic attraction, but if we suppose the stream of leucocytes to be a response to local absorption it may be expected to vary with the latter. The fact that constitutional symptoms may in certain cases be elicited by pinching a carbuncle shows that absorption varies with the local pressure. Therefore, it will vary with the variations of pressure which must occur naturally in the course of carbuncle. It will vary also with other natural variations—variations, e.g., in the activity of the capillaries and lymphatics. Such slight normal variations could scarcely, however, affect materially the absorption of bacteria, but might cause alterations in the rate of absorption of a more or less soluble toxin. Also the somewhat variable, fitful, or wavy character which patients at times ascribe to their sensations fits in very well with the notion of a varying absorption from the focus. Thus many indications concur with Dr. Andrewes's discovery of fluctuations in the late staphylococcal leucocytoses to lend countenance to the notion that the systemic poison of carbuncle may possibly be fluid.

Finally, I may refer to the work of those busy allies of Dr. Andrewes, who approach the subject on its more practical side. To expect a practitioner to prove that his treatment is an essential element in the cure is to impose a test which has never been considered entirely fair. It will always be open to critics, and I am afraid some of them have been unkind enough to avail themselves of the opportunity, to say that cure would have occurred just the same without the special measures employed. Still, the vaccinationist is not quite the kind of person to be browbeaten, and there is nothing very extravagant in the belief that had he succeeded in stopping a carbuncle he would certainly have claimed to be able to do so. Now, I have searched the published writings with some care, and have nowhere seen it asserted that vaccination will cause a carbuncle to stop short of the size it would in the natural unvaccinated course of things have attained. The statements are either quite general or indicate that the treatment is of use, not in the arrest, but in the cure of the complaint. Thus Western records nine cases in THE LANCET of Nov. 23rd, 1907, cured by aureus vaccine, which had all been previously treated in the ordinary way "without showing any adequate attempts at repair." Others speak of the "efficacy of the vaccine in breaking down chronic indurations." It is certain that the vaccinators have not yet been able to point to results comparable with those obtained from the serum treatment in diphtheria. They have not shown us the brawny induration of an enlarging carbuncle changed in the course of a few hours into a healthy granulating sore. Their failure is confessed in the fact that they one and all recommend the use of an auto-vaccine, during the preparation of which the carbuncle will in almost every case have already become arrested. That the injections should promote healing is what many facts of general experience would lead one to expect. Though we do not know in what precise way the staphylococci interfere with repair, the importance of phagocytosis in the late stage of carbuncle is established quite independently of the vaccine therapy. Speaking for myself, it has never occurred to me to think that the systemic poison in carbuncle is destroyed by antitoxis. In my letter I say that "it is scarcely at all neutralised by antitoxins." It is doubtless eliminated from the body by the ordinary channels and destroyed locally as the leucocytes gradually get the mastery of the bacteria. Thus, in carbuncle, while the main danger from tissue destruction is provided against by antitoxis, the lesser from non-healing and systemic intoxication is dealt with by phagocytosis, just as in the contrasted case of diphtheria the greater peril from systemic poisoning is met by antitoxis, while the lesser from the local inflammation is probably counteracted by phagocytosis. Both complaints show us antitoxins forming, as it were, the last line of defence against bacterial attack.

I am, Sir, yours faithfully,

I. B. MUIRHEAD.

Stoke Newington Common, N., Dec. 27th, 1910.

A MEDICAL CLUB IN PARIS.

To the Editor of THE LANCET.

SIR,—Dr. Madeuf, whom I know personally, has asked me to draw attention to the Médical Club Étranger in the English medical papers. I have visited the place, which is thoroughly well built and organised. As it is likely to be of great use to English medical men visiting Paris, I think it worth while to draw their attention to it.

I am, Sir, yours faithfully,

H. J. JOHNSTON-LAVIS.

Beaulieu, Alpes-Maritimes, Jan. 9th, 1911.

TUBERCULOSIS AND STATE INTERVENTION.

To the Editor of THE LANCET.

SIR,—Our attention has been drawn to certain ambiguous references to the Conference on Tuberculosis held recently at Edinburgh. These concern more particularly the resolution which was passed at the close of the discussion on "The Working Man in Relation to Tuberculosis." The suggestion has been made, and is prominently repeated by the authors of "The Conquest of Consumption" in the preface to the second edition, that the Conference "was practically unanimous in the opinion that some form of State intervention was necessary." As occurring in the introduction to

an elaborate plan of campaign, in which the authors relegate in wholesale fashion to the State responsibility for the handling of the tuberculosis problem, the sentence seems to us misleading.

We think it right to say that the resolution which was adopted by the Conference was limited to the question of working men's invalidity insurance. The actual terms of the resolution were as follows:—

That the special attention of the Chancellor of the Exchequer, Government, and Parliament be called to the great importance of giving the prevention and treatment of tuberculosis a prominent place in the proposed scheme of invalid insurance.

We are, Sir, yours faithfully,

W. LESLIE LYALL, M.B. } Joint Honorary
JAMES MILLER, M.D. } Secretaries.

Edinburgh, Jan. 17th, 1911.

A POINT IN CHOLELITHIASIS.

To the Editor of THE LANCET.

SIR,—In your issue of Dec. 24th last Dr. Duncan Macartney asks for instances where large numbers of gall-stones have been removed by operation. In February, 1910, I operated upon a male patient of Dr. W. B. Chapman of Rochdale, and removed 3007 gall-stones, varying in size from a hazel nut to a split pea, and all facetted. The stones are now in my possession, though I have not myself verified their number, the patient having counted them during his convalescence. He had suffered for many years from severe attacks of colic, each of very short duration, and on no occasion followed by jaundice. The gall-bladder appeared, apart from the presence of these calculi, to be normal, and I performed merely a cholecystostomy. His convalescence was interrupted by an attack of pulmonary embolism in the third week, followed by embolic pneumonia, from which he ultimately made a good recovery, and he is now in excellent health.

I am, Sir, yours faithfully,

Manchester, Jan. 16th, 1911. ARTHUR H. BURGESS.

THE PRINCE FRANCIS OF TECK MEMORIAL FUND.—At the Memorial Concert for the late Prince Francis of Teck, to be held in aid of the funds of the Middlesex Hospital at Queen's Hall on Jan. 24th, the programme will consist of Beethoven's overture, "Leonora III.," Verdi's famous "Requiem," with 500 voices and instruments, by the Brighton Choir and Festival Orchestra, under Mr. Joseph Sainton, and Wagner's triumphant "Heldegungs-Marsch." The soprano parts will be sung by Miss Alys Bateman, who needs no introduction. Other artists on the programme are Hannah Jones, Ben Davies, and Edmund Burke, the last-named by permission of the Italian Opera Company, Covent Garden.

LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill announce for publication a new edition of Vol. IV. of "Allen's Commercial Organic Analysis," which has been rewritten under the editorship of Mr. W. A. Davis, B.Sc., and Mr. S. S. Sadtler, S.B. The subjects and authors are as follows: Resins, by M. B. Blackler; India-rubber, Rubber Substitutes, and Gutta-percha, by E. W. Lewis; Hydrocarbons and Ketones of Essential Oils, by T. M. Lowry; Volatile or Essential Oils, by E. J. Parry; Special Characters of Essential Oils and Tables of Essential Oils, by H. Leffmann and C. H. LaWall. It will be seen that each subject is handled by an expert in his department.—Messrs. George Newnes, Limited, announce the impending publication of "Careers for Men, Women, and Children," a book describing most occupations, giving information regarding education or training required, length of time taken in preparation, the cost of qualifying, incomes to be made, and prospects afforded by the employments.—Messrs. W. B. Saunders Company announce that they have in the press for immediate publication a work on "The Anatomic and Histological Processes of Bright's Disease," by Dr. Horst Oertel, director of the Russell Sage Institute of Pathology, New York. In the preparation of this work the author has had in mind a twofold aim—to present the visual picture of nephritis and to prepare the proper way for the understanding of the genesis of the disease.

THE HOUSING PROBLEM IN SOUTH WALES.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

Merthyr Tydfil, Dec. 1st, 1910.

The Valley of Martyrdom.

THE problem of the housing of the poor, always difficult and nowhere satisfactorily solved, has been stated to be specially acute in both North and South Wales. Undoubtedly there are in South Wales very substantial reasons why this is likely to be the case. There is the rapid and uneven growth of population of South Wales, springing from 587,000 in 1801 to 2,013,000 in 1901. If, however, this more than three-fold increase had been evenly spread over Wales it would not have mattered, but half the population of South Wales is living in Glamorganshire, which is only one-ninth of the entire area. Here the augmentation of inhabitants during the last century has been fourteenfold, and no one will be surprised to find that the building of houses has not kept pace with the advent of the new inhabitants. Thus the housing trouble, urgent in all large agglomerations, is specially serious round and about the great iron-works and mining industries of South Wales. The Local Government Board, fully cognisant of the figures, caused a series of special investigations to be made, and some four years ago published many reports on the subject. The chief centre, of course, is Merthyr Tydfil, where a Christian princess named Tydfil was martyred in the sixth century. The church subsequently raised to commemorate this martyrdom has become the centre of a great manufacturing district where many thousands have been brought prematurely to the grave—martyrs to the Moloch of modern industrialism. Indeed, the Merthyr Valley, or the Valley of Martyrdom, is no misnomer, and its sinister appearance does not belie its reputation. It is black, its people are dirty, many have but miserable rags to wear, there is smoke and coal-dust and soot suspended as a pall over the whole scene, while from the centre terrible volcanic eruptions constantly occur that suggest an invasion from the lower regions. It is appalling, but it is also grand, suggesting mighty powers, mastery over the forces of nature, the conquest of the earth and its treasures; but the pity of it is the accompaniment of so much human misery. Why not master the secret of human happiness? Would not this be preferable even to a Bessemer blast furnace?

A Modern Inferno.

The story goes that a traveller approaching the Dowlais district of Merthyr asked to be driven back quickly, declaring that he had never before been so near to hell. The word remains. It is no unusual thing for a person to say he has come from hell when he has been to Dowlais. The ironworks for which Dowlais is renowned are situated in a valley, and the hill overlooking them is covered by some of the worst slum dwellings. It was while visiting after dark these hovels where the wealth producers of Dowlais dwell that I was able to contemplate what has so often been compared with the infernal regions. On one side of the works there is a large stretch of open flat ground covered over with rollers that are ever revolving, so that any heavy object placed on them is pushed forward by their rotary action. Formerly these objects required much labour to move; they now glide along as if of their own accord, and the worker who used to manipulate the iron rails is thrown out of employment, his poverty accentuating the housing difficulty. From a fiery region under the Bessemer blast furnace I saw red-hot iron railway lines glide along like great incandescent serpents. Occasionally they pass under an iron structure which squeezes them into a longer and more correct shape, till finally, and as a last ordeal, a steel rotary saw chips off the irregularly shaped tip and tail of the rail. Then the fiery serpent makes a horrible hissing noise and squirts out in all directions, as if it was its life blood, a shower of red-hot iron drops. After that one more glide and the rail has reached its resting-place, where it cools down and loses its bright redness. All this goes on automatically, not a man is to be seen, any amount of work is done, but independently of human labour, while the unemployed clamour at the gates or shiver and starve

in their hovels on the hill close by. Throwing a lurid light over this rapid all-devouring production of wealth and misery the Bessemer blast furnace gives off and illuminates rounded and rolling clouds of pearl-grey smoke and steam. In a little while the colour turns into different shades of yellow, so that the lofty smoke-stack hard by suggests a ghostly, upright, and dignified presiding genius draped in robes of varying tints. Then apparently some sort of cataclysm occurs. A strange darkness comes over the land. The smoke turns to a violet hue, a *lie de vin*, as if the pressed grapes of a vintage had evaporated into clouds that retained its colour. When various chemicals are thrown into the molten metal, so as to purify it, pyrotechnic effects are produced that put exhibitions of fireworks into the shade. And here at least, and close round these Bessemer blast furnaces, men are at work. They can be seen dodging the sparks of molten metal. They grope about, stoop, lift, and run like so many pigmies in the caves of Vulcan. Indeed, the worshippers of this antique divinity never imagined anything so powerful, so huge, grand, and awe-inspiring. But would Vulcan have allowed his assistants to live sordid lives in miserable slums which have acquired such a sensational reputation that the sociological student is told he must not fail to see them? Perhaps if the shareholders of the modern works of Vulcan would also approach the forge and see what the work is like we should not have to wait so long for the much-needed life-saving reforms.

The "Box and Cox" Problem.

What these reforms should be is at least in part indicated by Dr. J. Spencer Low's report to the Local Government Board, which was published in the spring of 1906. Some of the more salient points in this report I noted down, and on arriving at Merthyr Tydfil called on the sanitary authorities to inquire whether the criticisms then made still applied. It was gratifying to find that the importance of the housing question is fully recognised. Dr. Alexander Duncan, the medical officer of health, received me most courteously and was very ready to help me in every way. It at once seemed evident that improvements have been effected since the publication of the Government report; but it was likewise equally evident that a great deal still remains to be done. Also in some details there is contradiction in the evidence. For instance, the Blue Book report alludes to the letting of one bed to a couple of tenants, the one being a night worker and the other a day worker. Dr. Duncan doubts whether this was the case when the Government report was written, and does not believe the abuse still exists. On the other hand, when I went about and inquired from different persons who have good opportunities of knowing, they were very positive that the practice still prevailed, and that the farce of *Box and Cox* was being produced any day and in real life at Merthyr Tydfil. What also frequently happens is that when the breadwinner works at night his family occupy his bed during his absence and let their own bed to a lodger. If the bed thus utilised day and night by the family was situated in a large room with big windows, and could have a good airing during the brief intervals between occupancy, the evil might be less obvious. In many cases, on the contrary, it is not even put in what in fairness can be called a room. It is often crowded into a compartment next to the kitchen or living room which is so small that no other furniture but the bed can be introduced. This so-called room may be only 4 feet wide and 8 to 10 feet long. On the hillside, overlooking the ironworks just described, I saw such rooms. They were in little one-storeyed cottages. The door from the street gave on to the one common living room of the house. Here is the fireplace or kitchener where all the cooking is done; here is the square table on which all the meals are served; along one wall is a dresser for the plates, the pots and pans, and most of the possessions of the family. When the breadwinner comes home, especially if he is a miner, a tub is rolled up before the fire and a screen placed around it. The man strips for a wash, and his clothes, damp with perspiration and sometimes drenched with rain, are hung up on the screen to dry. Soon the small dwelling is filled with the steam and the human exhalations evaporating from the clothes. By the side of this common room there is the very small compartment where the bed has been placed. If the door to it is closed it will be too cold for the man who has been washing with hot water before a good fire. If the door remains open then the sleeping compartment will be filled with the steam and smells from the kitchen fire and the dirty clothes hanging in front. There may not be a window, a little square opening, barely more than a foot or 18 inches in diameter, giving on to the street and only a few feet above the pavement, will serve instead. And this is not likely to be unobstructed, for mischief-making boys would throw things through and hit the sleeper as he lay stretched under this, the sole aperture giving on to the outer air. Above, under the roof, is one small room, sometimes two. Here the breadwinner and his family might sleep in peace and a better atmosphere, but this they cannot afford, for they must take in lodgers, otherwise it would not be possible to pay the rent.

Compulsory Cleanliness.

Another point raised by the Government report was that where back-to-back houses had been abolished by cutting a hole through the partition wall, the letting of the back room as a separate lodging caused the door of communication between the back and the front to be permanently closed, and thus the condition of a back-to-back house was again brought about. The object of such a door is to establish a through draught, but if there are different tenants on each side of the door they will not only keep the door shut, but push whatever heavy furniture they may have against it. The practice still continues, and the effort to do away with back-to-back houses has been frustrated in this manner. Consequently it is now sought to bring such houses under the by-laws as to houses let in lodgings or occupied by more than one family. This, however, is only applied where there are six or more lodgers, and there remain many very insanitary dwellings with a smaller number of inhabitants. Nevertheless, where they can be applied, these by-laws, which are newly enacted, are very stringent and should be effective. They leave little or nothing to the commonsense or to imagination, but minutely define what is meant. Thus overcrowding means less than 400 cubic feet for every person above 10 years of age and 200 cubic feet for every child under that age. Then there must be not more than 12 persons for every closet provided, and the by-law does not merely say that all parts of the premises are to be kept clean; it defines cleanliness as the removal of all slop-water and refuse from within the house at least once a day. The floors are to be swept every day before 11 in the morning and scrubbed every week. The bedroom windows are to be kept open one hour every morning and every afternoon. There is to be a tremendous scouring out of the entire premises with lime-washing of the walls every April and October. The chief point is that this is no mere advice given to housekeepers, but the right of entry and inspection both day and night is carefully secured; and if these rules of cleanliness are not carried out there is a solid penalty of a £5 fine that can be inflicted. It will be found cheaper to sweep and to scrub than to pay £5; and with a certain class of people this is the only way the desired result can be secured. This is excellent so far as it goes; unfortunately, it does not go very far. In the year 1909 there were 11 houses let in lodgings brought under this by-law, but this made a total of only 33 houses in all placed on the register. Some of these houses were put on the register because there were cellar dwellings which, though thrown into communication with the house above, continued to be let to separate tenants. In other cases there were more than six lodgers in the same house paying less than 5*s.* a week for unfurnished, and less than 7*s.* 6*d.* for furnished, lodgings. To see that these 33 houses let in lodgings observed the new by-law 122 inspection visits were paid during the course of the year, yet no contravention was reported. This is very satisfactory so far as it goes, but 33 houses, however clean, is a very small matter in the midst of a population of close upon 80,000 people, this being the estimated population of Merthyr Tydfil.

(To be continued.)

A SOMERSET CENTENARIAN.—Miss A. Hutchings, an inmate of Wellington (Somerset) workhouse, celebrated the 100th anniversary of her birthday on Jan. 6th. The father of Miss Hutchings died on the anniversary of his 100th birthday, and her brother died in Australia in his 104th year.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Progress of Sanitation in Liverpool.

THE chairman of the health committee, reviewing the past year from the public health point of view, remarked that for a number of years the returns had shown that the great sanitary operations carried on were slowly but surely bearing fruit. The rate of mortality of Greater Liverpool in 1895 was 24·8 per 1000 of the population. The figure during the succeeding ten years had gradually declined. In 1905 the lowest rate recorded was reached—namely, 19·2 per 1000. In 1909 a further record of 18·3 per 1000 was reached, and for the year 1910 the lowest record of all had been attained—that of 17·4 per 1000—which was eminently satisfactory. It must not be forgotten that the position of Liverpool as a seaport rendered it particularly open to imported disease, whilst the precarious employment incidental to a seaport meant low average wages, much poverty, and its attendant evils. Whilst the infant mortality during the year had been the lowest on record, yet the most marked saving of life had been at the later age-periods. The mortality from phthisis and other forms of tuberculosis had shrunk to a lower figure than previously recorded, and the same observation applied to zymotic diseases generally, whilst for the first time a whole year was passed without one single death from typhus fever. The great saving of life implied by the figures did not by any means represent the full benefit of the improvement in the public health. It was generally calculated that each death represented at least 10 cases of serious and anxious illness. Therefore the diminution in the deaths implied a proportionate diminution in sickness and the suffering and loss inflicted by it. The number of deaths in 1910 was 3000 fewer than in the year of incorporation of the out-townships (1895), notwithstanding that the population had increased by 115,000, which was almost equal to the entire population of Birkenhead. The death-rate was still very high in the Exchange, Scotland, and Everton divisions, in which a good deal of the property was erected quite 100 years ago, when the policy was to get as many houses as possible on an acre of land. In these districts they had to strive to get as many open spaces as possible. If they could effect an improvement in the death-rate in those localities there was no reason why Liverpool should not become one of the healthiest towns in England, and have the lowest death-rate of any seaport in the country. He ventured to prophesy that the death-rate of the city would be gradually reduced to as low a figure as 12·4 per 1000. The returns for the past week showed a death-rate of 17·5, against 18·4 per 1000 last year.

Liverpool Select Vestry: Epileptic Colony at Maghull; Enlargement of the Liverpool Workhouse; Death of Mr. Henry J. Hagger.

At a meeting of the select vestry held on Jan. 10th the question of a contemplated expenditure of about £40,000 at Maghull and of over £10,000 on the Liverpool workhouse came up for discussion. The committee appointed to consider the erection of a colony for epileptics at Maghull reported: "Consequent upon the adoption of their first report the committee have considered the further steps to be taken, and now recommend that the proposed buildings be erected at an inclusive cost of the whole not to exceed £150 per bed, or £45,000. The committee considered this a maximum amount, and trust that the architects will find it possible to reduce the cost to about £130 per bed, or £39,000 for the whole. The committee recommended that the architects be engaged by the select vestry to prepare sketch plans of the suggested buildings, together with an estimate of the probable cost of the same. These would have to be submitted to the Local Government Board for their approval before proceeding further." Mr. T. D. Laurence, in moving the adoption of the report, said that the architects had entered into the spirit of the vestry's requirements—good buildings, but inexpensive. The motion was adopted with some slight opposition. It was also agreed to accept a tender for £10,133 for alterations to the Brownlow Hill workhouse, a loan to be applied for in order not to burden the rates too suddenly. In reference to some remarks from members of the vestry that epilepsy was on the decrease, Mr. T. Horrigan challenged the statements, and said that there was an alarming increase of lunatics, imbeciles, epileptics, and kindred sufferers.—The veteran Mr. Henry James Hagger, vestry clerk of the parish of Liverpool, died on Jan. 10th in his eighty-second year. He was the oldest Poor-law official in England, having given 64 years of faithful and capable service to the Liverpool Select Vestry. Prior to interment a memorial service was held in the workhouse chapel, when the bishop of the diocese delivered an impressive address extolling the deceased's many virtues.

Hospital Sunday in Liverpool.

On Sunday, Jan. 8th, collections on behalf of the medical charities were made in the various places of worship in the city and suburbs. The amounts were well up to the average, on the whole giving cause for the greatest satisfaction. Ullet-road Unitarian Church rose to the occasion and resumed its place at the head of the list with £575; Sefton Park Presbyterian Church was a good second with £528. The total amount collected since 1871 (the year of foundation) realised £463,769, which was distributed among the various hospitals, minus £19,000, expenses incurred. The expenses of the committee have not been guaranteed this year as on one or two former occasions.

Jan. 17th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Tuberculosis in Bristol.

AT the request of the health committee of the Bristol city council, Dr. D. S. Davies, the medical officer of health, has prepared an interesting report on tuberculosis. Much of it consists of general information, and though this will be of great value to the laymen who read it, the principal interest as far as the medical profession is concerned lies in those parts of the report which relate to the incidence of tuberculosis in Bristol. In one table the decline of the phthisis mortality is strikingly illustrated; in 1856 the death-rate from phthisis was 269 per 100,000 living, while in 1909 it was only 103, and the years intervening show that the decline has been a steady one. Dr. Davies estimates that at the end of 1909 there were 2552 persons with phthisis living in Bristol, and that under the voluntary system of notification at present in force almost half the cases which occur escape notification. The risks of overcrowding are most quickly lessened by removal of the sick from among the healthy, though, of course, every means should be used to diminish overcrowding itself. The factors which have been responsible for the decline of tuberculosis in Bristol are general improvement in sanitation and housing, dissemination of knowledge as to the nature of the disease, institutional segregation (as in the workhouse infirmaries), sanatorium treatment at Winsley, notification and the control thus acquired by the health officer over the spread of the disease, increased care with regard to food supplies, and pamphlets of advice. The institutional treatment at present available for patients suffering from phthisis in Bristol is represented by 20 beds maintained by the corporation at the Winsley Sanatorium and the provision made by the Poor-law authorities. The work done by the 20 Winsley beds in the past five years is summed up in the statement that of 866 applications for admission it has been possible to receive 357, of whom about half retained working capacity at the end of the period under consideration. The number of rejections with that of the non-recoveries makes it clear that the provision made by the corporation needs to be supplemented by some such means as a farm colony. Further accommodation is also needed for advanced cases; the guardians have done a good deal in this direction and are considering further steps. In concluding, Dr. Davies recommends the following measures as an expansion of the good work already in progress: reissue of handbills concerning alcoholism, by-laws for the artificial elevation of low or damp sites, provision of public abattoirs, strengthening of supervision over meat and milk supplies, systematic examination annually of milk for tuberculosis, compulsory notification, health visitors and nurses,

reissue of pamphlet advice, more sanatorium beds for early cases, farm colonies for after-treatment, more institutional accommodation for advanced cases, and antituberculosis dispensaries.

University of Bristol Colston Society: Annual Dinner.

The twelfth annual dinner of members of the Colston Society was held on Jan. 16th in the large hall of the University, under the presidency of Mr. J. H. Howell. The guests of the evening were Sir Alfred Hopkinson, K.C., LL.D., and Sir Thomas H. Elliott, K.C.B. The treasurer of the society, Mr. J. W. Arrowsmith, was able to announce a collection of £628, which will be devoted, as in preceding years, to the support of the University. The present aim of the society is to raise £1000 a year for the endowment of a Colston chair. The health of the guests was proposed by the Bishop of Bristol. Sir Thomas Elliott, responding first, emphasised the pre-eminent importance of agricultural research such as is contemplated under the auspices of the society, and by means of its contributions to the University. Sir Alfred Hopkinson, who followed, spoke of the great value of the new universities to the nation, and of the close union which ought to exist between citizens and university in a city like Bristol. He urged the citizens to maintain the University in a condition of independence, and not to allow it to become attached to a department of State. Dr. R. Shingleton Smith proposed "The City of Bristol," to which the Lord Mayor and the Sheriff replied. In response to the toast of the University, proposed by Sir W. Howell Davies, Sir Isambard Owen, the Vice-Chancellor, said that he hoped the University would have money enough to build itself an adequate library, to provide itself with a sufficient stock of scientific apparatus, and to support the research carried on within its walls. In conclusion Mr. Howell introduced Sir Isambard Owen as the president-elect.

Bristol University Settlement.

The scheme which has for long been under discussion is gradually issuing from the realm of mere discussion and project into that of fact. The settlement which is to be established under the auspices of the University will be, in the first instance, a women's settlement—that is to say, the first set of residents will be women, though men will help in the work. The site chosen is in Barton Hill, a large overcrowded district of working-class streets, consisting of dwellings too recently built to be classed as "slums," but housing a class to whom such work must be beneficial in the highest degree. The settlement, which is to be started in the autumn, will be supported by private contributions and not out of University funds. Workers will be supplied by the University, and the task of organisation will fall upon the University.

Improvement of Housing in Bristol.

The Bristol city council has determined to sweep away an area of slum dwellings in St. Philip's which has long been an eyesore to persons arriving in the city by train from the eastern side. It is probable that this will displace a population of 600 or more. Provision of fresh accommodation for these persons is no part of the scheme passed by the council, but it is hoped that the share which Bristol is to receive of the Sutton bequest will facilitate the erection of model dwellings. Under the will of the late Mr. W. R. Sutton £500,000 have been allocated for the acquisition of sites and building of model dwellings in two poor districts of London and eight provincial cities, of which Bristol is to be one.

Bristol Dispensary.

At the annual meeting of the Bristol Dispensary it was stated that the number of new patients admitted to treatment in 1910 was 11,774, an increase of 681 over the previous year. The number of midwifery notes issued was 688 and medical assistance was called for in 31 confinements. The balance-sheet shows that the income exceeded the expenditure, though by a smaller margin than in the preceding year. An old house which used to be the dispensary has been disposed of for £750 and several legacies and donations were also received. There have been two changes in the staff—Dr. C. E. K. Herapath and Mr. T. B. Dixon succeeding Dr. W. J. H. Pinniger and Dr. J. F. Blackett, both of whom have resigned.

Case under the Midwives Act.

At the Gloucester police-court on Jan. 7th, Susannah Longney of Norton was fined £1 and 6s. costs for unlawfully using the title of midwife, she not being certified under the Midwives Act. The woman displayed a board stating that she was a midwife, after the Central Midwives Board had notified her that her name had been removed from the roll of midwives. This is one of the first cases instituted in Gloucestershire under the Act.

Enlarged Public Health Laboratory for Somerset.

At a meeting of the Somerset county council, recently held at Taunton, it was decided, on the advice of Dr. W. G. Savage, medical officer of health, to extend the public health laboratory by setting apart two rooms in the county council office at Weston-super-Mare for that purpose. The cost of furnishing the rooms will be £120, and the estimated expenditure will be about £250 per annum, which will include the salary of the analyst of £200. No fees will be charged for public health work to boards of guardians, district councils, borough sanitary authorities, &c., and the medical officer of health will arrange a scale of charges for other authorities and persons.

Proposed Hospital for Burnham and Highbridge.

The Burnham and Highbridge (Somerset) district councils are unofficially supporting the proposal for erecting a cottage hospital for the districts of Burnham and Highbridge, and a public meeting will shortly be called to consider the matter. A small hospital is much required, and the medical men of the neighbourhood are strongly in favour of the scheme.

The Plymouth Memorial to King Edward VII.

At a public meeting held in Plymouth on Jan. 5th it was decided to establish a "King Edward Fund" as a memorial to the late King. An influential committee was appointed to raise funds for the purpose. It was also determined that the sum of money thus raised "should be devoted to the prevention and cure of consumption in Plymouth in such manner as the committee may decide."

Medical Relief and Old-age Pensions.

At the meeting of the St. Thomas's (Exeter) board of guardians, held on Jan. 13th, the chairman suggested that the district medical officers should be informed that, except in cases of emergency, they were not to attend any old-age pensioners without a note from the relieving officers.

The late Deputy Inspector-General Matthew Coates, M.D. Durh., F.R.C.S. Eng., L.S.A., R.N. (retired).

Deputy Inspector-General M. Coates died at his residence, Bursledon House, Dawlish, Devon, on Jan. 13th, after a short illness. The deceased officer received his medical education at the Bristol Medical School, and he also studied at Paris. He took the M.R.C.S. qualification in 1859, and the year following the L.S.A. In 1869 he passed the examination for the F.R.C.S., and graduated M.D. of Durham in 1883. Shortly after qualifying he entered the Royal Navy as assistant surgeon. From 1863 to 1865 he was assistant surgeon at the Royal Naval Hospital, Haslar, and from 1867–71 he held a similar appointment at H.M. Dockyard, Devonport. From 1875 to 1878 he was staff-surgeon in charge of the Royal Naval Hospital, Esquimalt, Vancouver Island. In 1882 he retired from the service, with the rank of deputy inspector-general. He shortly afterwards came to Dawlish, where he soon became very popular. He was much interested in ambulance work, was a lecturer and examiner for the St. John Ambulance Association, and an Honorary Associate of the Order of St. John of Jerusalem.

A Cottage Hospital for St. Austell (Cornwall).

At a meeting held at St. Austell last week it was decided to erect a cottage hospital which will contain 10 beds. The hospital will be only used for accident cases. Up to the present nearly £2000 has been raised, and the committee requires £600 more. It is hoped that the foundation-stone of the building will be laid early in April and that the institution will be finished in six months.

The late Dr. George Morton Wilson.

A memorial has been erected at Pendyffryn, by several old friends and patients, to the memory of the late Dr. G. Morton Wilson. The memorial, which was unveiled last week, is a handsome sundial. It contains four medallions, one of which is a portrait of Dr. Wilson; the other three have symbolic figures of a lion, ox, and pelican. Dr. Wilson's motto "Hasten slowly" is also inscribed. Dr. Wilson was a Cornishman, his father, the late Dr. George Wilson, having

practised for many years at Launceston. Dr. Wilson, who established the Nordrach-in-Wales at Pendyffryn, was one of the first to recognise the importance of the sanatorium treatment for pulmonary tuberculosis. He died at Pendyffryn on Jan. 6th, 1910, in his forty-fourth year.

Jan. 17th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Irish Emigration Statistics.

THE report of the Registrar-General of the number of emigrants, natives of Ireland, who left Ireland during the month of December, 1910, shows that the total number was 423, as compared with 633 in the same month in 1909, a decrease of 210. The total number of emigrants for the year was 32,457, as compared with 28,676, an increase of 3781. Of this total 4258 were from Leinster, 8330 from Munster, 12,271 from Ulster, and 7598 from Connaught. 24,905 of these went to the United States, 4416 to Canada, 165 to South Africa, 613 to Australia, 179 to New Zealand, and 83 to other countries; 1656 went to England and Wales, 440 to Scotland, and of the 22,639 steerage passengers to the United States 7263 had their passages paid for in America. Two years ago, in the period of financial depression in America, the number of emigrants from Ireland suddenly dropped by about 40 per cent. Each year since, however, shows a gradual return to the previous average.

Dublin Joint Sanatorium.

It is hoped that the Consumptive Sanatorium of the city and county of Dublin may be ready for occupation at an early date. Nearly all the sanitary authorities of the county and city have united for its establishment, and a convenient and suitable site, on the western slope of the Dublin mountains some nine miles from the city, has been chosen. Building operations have been going on for some time. In the selection of a medical superintendent the joint committee adopted a wise plan, which one would gladly see adopted by other local authorities in the choice of medical officers. A committee of experts, consisting of the Presidents of the two Royal Colleges and the professors of medicine in the two universities situated in Dublin, was invited to consider the applications of all the candidates and to advise as to the best appointment. The expert committee selected out of a large number of applicants the four most suitable candidates. The joint committee elected the gentleman, Dr. Blake, whose name appeared first on the list.

Deadlock in Skibbereen Union.

For the past 12 months there has been a deadlock regarding the appointment of a medical officer for the Skibbereen union hospital. When Dr. W. Jennings died the board of guardians advertised the vacancy, and when the day of election came, elected two medical officers. The Local Government Board, while admitting its willingness to sanction the appointment of two medical officers, actually gave approval only to the appointment of Dr. T. J. O'Meara, declaring that Dr. P. J. Burke had been elected without due notice. The guardians brought the matter before the King's Bench, where it was decided that the election was invalid. All this took place several months ago, but as yet no election has taken place. On one occasion when notice had been given of intention to elect, the chairman refused to receive nominations, and summarily adjourned the board. Last week, under threat of a mandamus from the Local Government Board, the guardians proceeded to election, but the board being equally divided the election again fell through.

Tyrone and Fermanagh Asylum.

At the monthly meeting of the committee of management of this asylum, held on Jan. 12th, a resolution was adopted in favour of urging the Government to make provision for an annual grant of a fixed sum per head of not less than 4*s.* per week, the total contribution to any one district to increase or decrease as the numbers of lunatics increase or decrease, and deprecating the present system of deducting repayment of loans from the annual expenditure in calculating the annual cost per head for the purpose of the 4*s.* grant as being most unfair to the local ratepayers and in contravention of the Act of 1898.

Monaghan and Cavan Asylum.

At a meeting of the joint board of management of this asylum, held on Jan. 12th, it was reported that at present there were in the institution 918 patients, of whom 416 were chargeable to Monaghan and 502 to County Cavan. As to their estimates for next year there was an increase of £2000 on that of the previous year, which meant an increase of 1*d.* in the £.

Glenties Workhouse.

Mr. J. Coffey, Local Government Board inspector, has reported that, while no part of Glenties Workhouse Co. Donegal) could perhaps be quite classed as dirty, yet, with the exception of perhaps two wards, no part of it could be classed as clean. The report is to be considered by a committee of the guardians.

Jan. 17th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Royal Infirmary.

THE annual report of the managers of the Edinburgh Royal Infirmary has been submitted to the General Court of Contributors. The total number of patients treated as in-patients during the year was 12,342, as against 12,388 in the preceding year. The average daily number of patients was 842, as against 845; the average daily number of children was 85, as against 80; the largest number of patients on any one date was 881, as against 878; and the average period of residence was 25·1 days, this figure being the same as in 1909. Of the cases admitted, 5691 came from Edinburgh, 469 from Leith, and 5363 from the country. In the out-patient department 38,930 patients were treated, most of whom attended several times. The total ordinary income was £36,129 3*s.* 11*d.*, an increase of £301 8*s.* 11*d.* on the income of the previous year. The ordinary expenditure amounted to £54,217 17*s.* 2*d.*, an increase of £428 12*s.* 3*d.* The entire ordinary expenditure during the year (including the out-patient departments) per occupied bed was £64 7*s.* 10*d.*, an increase of 14*s.* 8½*d.* on 1909. There was a decrease in maintenance per occupied bed of 2*s.* 0½*d.*, but an increase in medical expenditure of 7*s.* 1*d.* The legacies and donations of £100 and upwards to the general funds amounted to £24,123 14*s.* 6*d.* There were 745 applications for admission as compared with 784 in 1909. The average number of nurses and probationers during the year was 260, The question of the remuneration of the sisters had been the subject of inquiry during the year. It was resolved that instead of increasing the pay, the retiring pension should be raised and that in future no payment on account of premiums should be required from the sisters. Hitherto the retiring allowance has been an annuity of £25, each sister having to pay a one-fourth share of the premium. The principal new works carried out during the year included the enlarging of the nurses' dining-room with the addition of a large pantry and scullery, and the providing of additional accommodation for nurses and female servants in Archibald-place. The Clinical Medicine Laboratory, the gift of an anonymous donor, was completed and formally opened by Sir Clifford Allbutt on Oct. 13th, 1910. The managers record their regret at the loss sustained by the infirmary by the death of Dr. Claud Muirhead, whose services to it had extended over 40 years, since he became an assistant physician in 1869. They also record with regret the death of Dr. John Smith, who had been consulting dental surgeon since 1888, having served for 25 years as dental surgeon to the infirmary.

Montrose Asylum Management.

A meeting of the managers of Montrose Asylum and Infirmary Board was held on Jan. 10th, when a communication was read from the Secretary of State for Scotland with reference to the proposed changes in the constitution and management of the asylum. Lord Pentland stated that he had had under further consideration representations made to him and to his predecessors by the Forfar District Lunacy Board and the parish councils of the counties of Forfar and Kincardine, in support of a proposal to effect

changes in the constitution and management of Montrose Royal Asylum, and also the proposals made for the new charter put forward by the managers of the Asylum Board. His lordship was aware that the new charter, as outlined in these proposals, was not viewed by the district lunacy board and parish councils as sufficiently meeting the necessities of the case, but he recognised the desire which these proposals evidenced on the part of the asylum managers to arrive at a settlement of the question at issue. It appeared to him that these could be discussed at a conference of the managers and representatives of the district lunacy board and representatives of the parish councils, and progress made towards this end. It was agreed to hold a meeting in about a fortnight to consider the matter. The question also came before a meeting of the Forfar District Lunacy Board at Forfar on Jan. 9th, to whom the Secretary for Scotland had also replied in similar terms. The board agreed to the proposal contained in the letter and resolved to appoint three of its number to attend any conference which might be held regarding the matter.

Aberdeen Parish Council: Medical Officer Question.

The Aberdeen parish council has at last settled the vexed question of the medical officership of Oldmill Poorhouse. In last week's issue I reported that the poorhouse committee recommended to the council the appointment of a visiting medical officer at a salary of £150 per annum. The council met on Jan. 10th, and after a long discussion rejected this recommendation, and decided by 17 votes to 10 to appoint a male resident medical officer at a salary of £200 per annum with board, at the same time retaining the services of the present lady resident medical officer at a salary of £90 per annum.

Hospital Sunday in Aberdeen.

Hospital Sunday fell on New Year's Day, and as the weather was bad the collections in a good many churches were poor. In other cases, however, it is gratifying to note an increased liberality, while in one or two cases the collection was postponed. The total for 44 churches and meeting places was £746 2*s.* 6*d.*, as against £924 12*s.* 8*d.* for 51 churches last year. The United Free Church comes first with £365 6*s.* 11*d.* for 16 congregations; the Church of Scotland next with £268 14*s.* 5*d.* for 12 congregations; five Congregational churches contribute £47 17*s.* 4*d*; three Baptist churches, £8 2*s.* 1*d.*; six Episcopal churches, £15 10*s.* 9*d.*; two Roman Catholic churches, £33 3*s.*; and six other churches and services, £7 8*s.*

Jan. 17th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Penetrating Wound of the Liver by a Bullet entering the Chest.

AT a meeting of the Surgical Society held on Jan. 11th, M. Potherat showed a youth, aged 15 years, who had received a revolver bullet in his right thoracic region. He did not at first present any symptoms giving cause for alarm, but after some hours there were evident signs of internal hæmorrhage. Careful examination of the thorax proved that the heart and lungs were uninjured; there was, however, marked retraction of the abdominal wall which made it probable that the abdominal contents had suffered. Laparotomy disclosed an extensive effusion of blood under the liver proceeding from a perforating wound of that organ; the point of entrance, which was small and situated on the upper surface of the liver, was not bleeding, but the point of exit, which was very large and situated on the inferior surface of the right lobe, was bleeding profusely. M. Potherat, after removal of the effused blood, closed the aperture in the lower surface of the liver with five sutures of stout catgut, and when the hæmorrhage was arrested he proceeded to search for the bullet. Without causing any further important injury it had traversed the root of the mesentery, and, passing under the peritoneum, had buried itself in the posterior wall of the abdomen on a level with the insertion of the right psoas muscle. Radiography afterwards showed it in this position, but M. Potherat did not think that its extraction was necessary. The patient had recovered completely.

The Question of Depopulation.

At a meeting of the Société de l'Internat des Hôpitaux de Paris held on Dec. 22nd, 1910, M. Créquy said that one factor in the question of depopulation was the circumstance that midwives, induced by the commissions offered by the registry offices, advised mothers to put their children out to nurse on the pretext that the mothers' health did not permit them to suckle their children. The mortality of bottle-fed infants was, however, five or six times as great as that of breast-fed infants. Statistics also showed that cases of abortion induced by midwives were very numerous. The remedy for this state of things was to give midwives the status of public officials—a system which would have the effect of distributing them uniformly over the whole of France. M. Bouchacourt, continuing the discussion, said that midwives who suffered from the overcrowding of their occupation in large towns were tempted to make money by questionable practices.

Fire at the Hôpital Bichat.

About 2 A.M. on Jan. 14th a fire broke out in the salle Louis of the Hôpital Bichat, a room which is on the ground floor of the building and is used as a store for the clothing of deceased patients. There was immediately a serious panic among the patients in the wards. Those who were able to do so made their escape, hardly giving themselves time to put on their clothes, while those who could not leave their beds uttered piercing cries. The firemen at the Carpeaux barracks on receiving a call hastened to the scene and dealt energetically with the fire, which threatened to spread to a pavilion filled with patients. After half an hour's work all danger was at an end and calm was restored. The origin of the outbreak has not yet been traced.

Ehrlich's New Remedy "No. 606" in Diseases of the Eye.

At a meeting of the Academy of Medicine held on Jan. 10th M. de Lapersonne and M. André Léri discussed the effects observed when patients suffering from diseases of the eye were treated with Ehrlich's antisyphilitic remedy, "arsenobenzol." They commenced with the statement that this arsenical compound had a much less injurious action on the visual organs than those which had hitherto been employed in syphilis. Atoxyl, for instance, has caused serious injury to the eye, even to the extent of producing blindness, but arsenobenzol, being more rapidly eliminated and not being given at such short intervals as atoxyl, was much less harmful to the eye. In the hands of M. de Lapersonne and M. Léri arsenobenzol had given good results in cases of iritis and even of optic neuritis without occasioning any concomitant ill-effects. In common with other observers they had found that a single injection of arsenobenzol did not bring about radical and permanent recovery from syphilis; relapses were, in fact, not infrequent, and Ehrlich himself had at last become an advocate of repeated injections. The remedy was unquestionably very powerful, very rapid in its action, and produced effects which could be more easily observed from day to day in cutaneous lesions than in the case of the eye. The new treatment might be combined with the use of mercurial remedies, which had not lost any of their therapeutic importance.

A Conviction for Illegal Practice of Medicine.

An unqualified practitioner, well known as the "Zouave" Jacob, who is at present 85 years of age, was last year acquitted by the Tenth Chamber of the Correctional Tribunal on a charge of the illegal practice of medicine. At the instance of the prosecution the case came before the Appeal Court on Jan. 14th. In his defence Jacob said that he was an intermediary between healing spirits and patients, and that he received a healing fluid which he therefore imparted to sick persons for the purpose of curing them. Notwithstanding this plea the court convicted him of illegal practice of medicine, ordering him to pay a fine of 100 francs and 200 francs damages to the Syndicate of Medical Men of the Seine. In pronouncing judgment the court gave an interesting definition of the word *traitement*, declaring that this word, which must not be used by a person unprovided with a medical diploma, includes whatever is done or advised for the recovery of a sick person or the relief of his symptoms.

Jan. 17th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Intravenous Injection of Grape Sugar.

Professor Kausch of Schöneberg, writing to the *Deutsche Medizinische Wochenschrift*, mentions that he has administered a solution of grape sugar by subcutaneous or intravenous injection to patients who could not be fed in the natural way. He has found that subcutaneous injections of strengths varying from 2 to 5 per cent. or intravenous injections of strengths varying from 5 to 7 per cent. of grape sugar were well tolerated by patients in a quantity of 1000 cubic centimetres per diem. Sugar was excreted by the urine after repeated injections, but only to the extent of 2 or 3 per cent. of the quantity administered. No undesirable complications ensued—neither pain, nor thrombosis, nor interference with the heart or other organs. Intravenous injection was preferable to the subcutaneous method, because by the former a larger quantity of fluid and that in a state of greater concentration could be administered. The sugar must be dissolved in a solution of sodium chloride of 0·9 per cent. strength, then filtered, and finally boiled; for intravenous injections from four to eight drops of a solution of adrenalin of 1 per 1000 strength must be added. With regard to the effect of the grape sugar on nutrition, Professor Kausch stated that the worse the state of nutrition of a patient was, the larger was the quantity of sugar that could be tolerated. He mentioned the case of a woman suffering from puerperal septicæmia in whom a temperature of over 40° C. was associated with vomiting and diarrhœa. She was given intravenous injection of grape sugar once or twice a day until 2000 cubic centimetres of a 9 per cent. solution were injected daily, only from 0·2 to 0·3 gramme of sugar was excreted by the urine, and in the result the patient recovered. It was very likely that the remainder of the sugar which did not make its appearance in the urine was assimilated by the organism; in this way food having a calorific value of 500 might be introduced into the organism each day. Cane sugar administered in the same way was also tolerated, but the proportion of it excreted in the urine was larger than in the case of grape sugar. Professor Kausch said that up to the present time it had not been known that the human organism was capable of assimilating such large quantities of sugar, and that this circumstance was not yet taken advantage of for the purpose of feeding patients. Although he had employed the method for surgical cases only, he was of opinion that it would be valuable also in the treatment of various ailments in which feeding in the natural way was difficult, especially in the hyperemesis of hysteria and pregnancy, in diseases of the gastro-intestinal canal, and in cholera. In the latter cases the injection of a solution of grape sugar was more efficacious than the injection of a solution of chloride of sodium.

Statistics of the Medical Profession.

According to the Medical Directory, edited by Professor Schwalbe, the number of medical men in Germany is 32,449, showing an increase of 480 over last year. There are now 5·01 medical men for each 10,000 of the population, which means a small decrease of the proportional number since the two previous years, in which it was 5·02 and 5·06 respectively. An increase of the medical profession may be expected in the near future, as the number of medical students has risen rapidly from 6032 in 1905 to 11,125 in 1910. It must, however, be remembered that this number includes the foreign medical students, of whom only a very small number pass the State examination and settle in Germany. The number of qualifications granted, which was 553 in the academical year 1906–07, rose to 829 in 1907–08, and to 942 in 1908–09. With respect to the distribution of the profession in the different parts of the Empire, it is remarkable that the recent statistics show a general increase throughout nearly the whole Empire (Mecklenburg, Saxony, and Alsace-Lorraine excepted); in the previous year the increase concerned only the western and southern parts, whilst in the eastern parts a small decrease was recorded. The large cities continue to be preferred by the profession. Of the 480 medical men who settled in practice last year, 329 reside in the large towns of over 100,0000 inhabitants; and of the 32,449 medical men practising in Germany, 13,261 reside in those large towns. For each 10,000 inhabitants of the large towns there were 9·85 medical men (in Berlin alone 12·32); for each 10,000 of the smaller towns and the country the corresponding proportion was 3·74. The number for the large towns has slightly decreased, while that for the smaller towns and the country has been the same as in the previous year. Of the large towns, Wiesbaden as a watering-place and health resort has far the greatest number of medical men—namely, 22·6 for each 10,000 inhabitants; next in order comes Munich with 16·6 per 10,000 inhabitants; whilst the town of Gelsenkirchen, in the Westphalian mining district, has the lowest number—namely, 4·0 for each 10,000 of its population of 180,000 inhabitants. The number of medical women, which was 55 in 1908 and 69 in 1909, has risen greatly, being now 102, of whom 32 are in Berlin. With regard to female medical students, 512 were registered, as compared with 379 in the previous year, foreigners being, of course, included. The number of specialists, which in 1906 was 6258—i.e., 20·2 per cent. of the profession—has risen in 1910 to 7272—i.e., to 22·4 per cent. of the profession. Of the specialists, those for diseases of women are the most numerous, then come the ophthalmologists, and in the third place specialists for diseases of the ear, the nose, and the larynx. Of the large towns, Dresden has relatively the greatest number of specialists, the proportion being not less than 44·2 per cent. of the profession. The figures have been analysed by the well-known statistician, Dr. Prinzing.

Treatment of Malignant Growths.

At a recent meeting of the Verein für Innere Medicin Dr. Reicher showed cases in which malignant growths had been treated by injections of adrenalin. He said that he had first administered this substance to rats and mice suffering from sarcoma and carcinoma, the result being that the animals recovered. In the human subject he had used adrenalin only in advanced cases, but a decrease of the growth and of the enlarged lymphatic glands was, however, obtained. In a boy, 12 years of age, suffering from a chondrosarcoma of the skull, the growth decreased to one-third of its original size after daily injections continued for 25 days; the boy also in that time gained 5 pounds in weight. The residual growth was then subjected to currents of high frequency, and finally to Roentgen rays, with the result that it disappeared two months ago. He had obtained a progressive metamorphosis in five cases of malignant growth, and he showed to the society a patient in whom a carcinoma of the skull, having, he said, the size of a gourd, had disappeared one and a half years ago.

Jan. 16th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Law and Medicine.

THE "Third Italy" has just opened, in the presence of Royalty and with every accessory of solemn inauguration, her Palace of Justice on the right bank of the Tiber, and the event coincides with the resuscitation of controversy as to the delimitation of frontier between the sister professions, Law and Medicine. These are continually overlapping, with more or less friction, particularly in criminal trials, throughout Italy, and, truth to tell, when they come into actual conflict the palm is apt to rest with the medical combatant, who, if he does not gain absolute victory, invariably receives a cession of territory which puts him at fresh advantage in the next encounter. The medico-psychological witness is treated with a respect, not to say deference, rarely accorded him in transalpine tribunals, where the presiding judge has been known to warn the jury that if the combined colleges of physicians in Christendom told them that a man might, physically, be so impelled to crime that, with full knowledge of the penalty he was incurring, he could not control the impulse to commit it, they were to attach no weight whatever to the deposition. Such intervention, in such a sense, would now be impossible in Italy, where medico-psychology, progressing on inductive lines and appealing to an exhaustive *catena* of cases drawn from clinical experience, has relegated to the criminal asylum offenders who, in a

previous generation, or countries ruled by tradition rather than by science, would have been dealt with as "responsible" and punished accordingly.

The Effects of Solitary Confinement.

That life-long incarceration, as a substitute for the death penalty, is fraught with evils *per se*—evils which make hanging or beheading seem humane in comparison—is a conclusion to which Italians, with more or less reluctance, are coming round. The frequency with which the inmate of the solitary cell, to which he is condemned till the close of his days, relapses into decrepitude physically and into idiocy mentally, when he does not "solve the problem of existence" by suicide, is manifestly impressing the public, and, coincidently, the forensic or judicial mind—impressing it, moreover, with a force which may one day lead to a resumption of the methods which it has prided itself on abandoning. True, the brutal, degrading scenes accompanying the revival of public executions in France—the guillotining of Favier at Lille the other day being an instance in point—tend to give pause to the movement in favour of the death penalty. But, on the other hand, the system adopted in the British Isles, reported and commented on throughout Italy on the occasion of Crippen's execution, is cited in abatement of the arguments based on French example, insomuch that if Italy returns to her practice of 40 years ago it will be on the lines of British precedent. As I write a deplorable case of suicide in prison "*per mancanza di compagnia* (for want of company)" is reported from Nice, where the criminal, on being denied human intercourse with his fellow prisoners, hanged himself (like Luccheni and Bresci and so many other assassins) by suspension from the grating of his cell. Why, Italians are asking, refrain from anticipating by the short, sharp British practice the method clumsily adopted after days or weeks or even years of suffering by the criminal himself?

The Countess Tarnowska.

In this context, the prison life of the protagonist in the trial which at Venice in the spring of last year fascinated the attention of all Christendom has an interest of its own. The Countess Tarnowska is now causing the gravest solicitude to the prison authorities by a succession of convulsive fits, followed by insomnia of a persistent type and visitations of panic, culminating in persecution mania. In dread of being poisoned she refuses to eat, even to smoke, resists being put to bed, and bivouacs on the floor. Pending the appeal to the Court of Cassation she used to learn Italian, to practise on the piano and the harp, and to exercise her vocal gifts in singing. Since that appeal has been rejected she has developed the symptoms above referred to, and now, by the intervention of the Government, she will be removed to the "carcere giudiziaria" (judicial prison) at Genoa, there to undergo special treatment at the hands of Dr. Luigi Maria Bossi, professor of gynæcology, with special experience in cases of hysteria. From first to last the countess has been a more interesting subject to medicine than even to the law, and the official report of her response to the new treatment awaiting her will be read with peculiar interest, not in Italy only, but wherever neuroses, fostered by stimulants, narcotics, and the unbridled sway of the passions, have run a continuous course.

Jan. 14th.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

The Census of the United States.

THE census of the United States, the results of which have been recently published, presents many points of interest. The total continental population of the country is now 91,402,151, an increase of 15,977,691 over the population of 1900. The increase for the past decade is greater than for that of the previous ten-year period, due, it is stated, to greater net additions to the population by immigration. The natural increase has been probably somewhat less from 1900 to 1910 than it was from 1890 to 1900. An instructive feature of the report is the far more rapid growth of the cities than of the rural districts. In the north the proportion of the total city-dwelling population was 40·6 per cent. in 1910, 34·2 per cent. in 1900, and 28·6 per cent. in 1890. In the south the corresponding percentages were 12·8 per cent. in 1910, 10·1 per cent. in 1900, and 9·5 per cent. in 1890. In the west the proportion living in cities of 25,000 inhabitants or more was 31·5 per cent. in 1910, as compared with 25·2 in 1900 and 22·6 per cent. in 1890. In short, 44·5 per cent. of the increase of the population of the United States from 1900 to 1910 has occurred in cities having 25,000 inhabitants or more. In the rural districts there has been, in many counties throughout the country, an absolute decrease of population. The director of the census returns is of opinion that this decrease is due not entirely to movement to the cities, but in some districts to movement to newer agricultural regions. The States that show the greatest increase of population, an increase of from 20 to 30 per cent., during the past ten years are for the most part the great manufacturing States of the north-eastern section of the country, including Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, and West Virginia. The only other States that have increased between 20 and 30 per cent. are Arkansas and Texas. As in Europe, so in America, the trend of population is to the towns.

A National Organisation for the Prevention of Blindness.

At a conference held in New York on Dec. 17th a national society for the prevention of blindness and conservation of vision was organised. Dr. Park Lewis, of the American Medical Association's committee on the prevention of blindness, Mr. Edward M. Van Cleve, President of the Ohio Commission for the Blind, and Mr. James P. Monroe, President of a similar commission in Massachusetts, were responsible for summoning the meeting. The committee on organisation recommended that the society include all persons and public bodies desirous of coöperating in "prevention of infantile blindness, prevention of blindness from industrial and other accidents and from disease, and conservation of vision through improved hygiene during school life and in industrial occupations," and that it invite the coöperation of prevention societies now in existence, of State and national medical societies, educational bodies, labour organisations, commercial bodies, women's clubs, and the like. On the motion of Dr. Studdiford of the New York Board of Health it was resolved that measures be taken to secure State legislation for the training, registration, licensing, supervision, and control of midwives, for the reason that half the births in cities are attended by such women, many of whom are ignorant, untrained, and incompetent, and that unnecessary blindness, mental and physical degeneracy, and suffering or death of mothers, are among the results of obstetrical malpractice. Mr. H. F. J. Porter, a consulting engineer who, according to accepted report, was one of the first to examine swimming-baths for their infectious possibilities, said that many infected eyes were due to the infrequency of the change of water in public swimming-baths and in pools, in gymnasiums, and factories. Another speaker called attention to the menace of the cheap spectacles which are now so largely sold. Increased scrutiny of trachoma among immigrants and examination of lighting facilities in public schools were also considered. The project to create a national organisation in the United States for the prevention of blindness is said to have received the approval of many of the leading ophthalmologists of the country.

Prevention of Infant Mortality.

A convention on infant mortality was held in Baltimore recently by the American Association for the Study and Prevention of Infant Mortality. The death-rate of infants under one year of age is very large in the United States. At the meeting in Baltimore the conditions tending to affect adversely the health and lives of very young children were exhaustively discussed. The question of milk in particular was debated in all its bearings, as well as the necessity for instructing mothers of the working class in the proper methods of rearing infants.

Health of Panama and District.

According to the recent report of the Panama Department of Sanitation, the total number of deaths among employees in the Canal Zone during October last was 42, 23 being from disease and 19 from injuries, making an annual death-rate per 1000 of 10·19. This rate is somewhat higher than that

for October, 1909. The annual average death-rate during October of this year in Panama, Colon, and the Canal Zone, and including the entire population, was 23·6. This, again, is an increase on the rate of the previous year. It is explained by the fact that there were a larger number of deaths from intestinal disorders among infants in the city of Panama.

Investigation of Typhoid Fever at the Naval Academy at Annapolis.

The Secretary of State has appointed a board of inspection to investigate the recent epidemic of typhoid fever at the Naval Academy at Annapolis.

Gaynor Hospital Fund.

A sum of $15,180 (£3036), collected as a thanksgiving offering for Mayor Gaynor's recovery from the injury inflicted by his would-be assassin, has been presented to the sisters in charge of St. Mary's Hospital, Hoboken, the institution in which the mayor was treated. £1000 will be devoted to the endowment of a bed to be known as the "Gaynor bed," and the remainder will be handed over to the hospital authorities.

Jan. 12th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

THERE was a slight increase in plague mortality during the week ending Nov. 19th, the figures being 7932 seizures and 6106 deaths, against 7305 and 5359, the respective figures of the preceding week. The provincial figures were: United Provinces, 1298 deaths; Bombay, 857; the Punjab, 840; the Central Provinces, 780; Rajputana, 602; Madras, 387; Mysore, 435; Hyderabad, 361; Bengal, 358; Central India, 135; Burma, 51; and Kashmir, 2.

The Punjab Jails.

In reviewing the Jail Administration Report for last year the Lieutenant-Governor fully agrees with the Inspector-General that the question of combating tuberculous disease is one of pressing necessity. To some extent the ravages of tubercle in jails are merely a reflection of the hold that it is getting on the population outside the prison walls. Still, there is some ground for thinking that there is something in jail life that predisposes to the disease. Sir Louis Dane desires to be informed whether the Inspector-General would advise a detailed inquiry by a pathological expert as to the etiology of tuberculous disease in the Punjab jails. As regards the treatment of youthful offenders, his honour suggests that the more frequent use of the provisions of Section 562, Criminal Procedure Code, or the infliction of petty fines would do much to remedy the evil. As regards whipping as a punishment for jail offences, his honour does not consider it possible to lay down a hard and fast rule. Whipping, he thinks, may be more necessary in certain states of discipline and in cases of certain individuals than in others.

Phthisis in India.

The following letter from the Government of India has been circulated to all local governments and administrations: "The attention of the Government of India has been drawn to the prevalence of tuberculosis diseases in India and to the great increase of phthisis in recent years in larger towns and cities, and it has been represented to them as most desirable that well-equipped sanatoria should be established with as little delay as possible in different parts of India for the treatment of tuberculosis patients. The Government of India are advised that the treatment of phthisis in the early stages of the disease in sanatoria in which patients can receive the most minute daily attention of specially experienced physicians, affords the only hope of cure, and they believe that many valuable lives will be saved if suitable institutions for treatment of tuberculosis patients are established in this country. The Government of India desire to commend this question to your earnest consideration, and will be glad to be informed in due course what action you propose to take or consider practicable. They think that funds for the purpose of establishing sanatoria will probably be found by private beneficence, and it is suggested that the coöperation of the charitable public may be invited."

Tuberculous Disease in Ceylon.

The commission appointed to inquire into the conditions of tuberculous disease in Ceylon has recommended the introduction of the system of compulsory notification of cases, the segregation of sick from the healthy, the establishment of a dispensary for out-door treatment in large centres where the disease is prevalent, the establishment of sanatoriums and of hospitals for advanced cases, and the education of the people in the prevention of phthisis. The commission is also of opinion that an anti-tuberculosis society should be established in Ceylon with branches in every important centre, and facilities should be provided for the free examination of sputum and other material for the bacillus of tubercle.

The Madras Memorial to King Edward VII.

The Government of Madras has issued its orders on the scheme proposed by the committee appointed in connexion with the subscriptions raised under the King Edward VII. Memorial Fund. The scheme of the committee was for a special consumptive hospital about ten miles out of Madras, but this has been rejected on financial grounds. The committee also suggested the provision of three sanatoriums, but here, too, the Government has deemed it advisable to limit the scheme. One sanatorium is proposed to be established at Coimbatore. A contribution will be given to the Missionary Sanatorium at Madanapalla. The sanatorium to be established at Coimbatore will be of 50 beds, and not 200 as originally proposed. The Government considers the entire funds should be devoted to this. The committee also suggested the provision of one phthisis ward at each district headquarters hospital. The Government proposes that a phthisis ward should be provided at a few selected hospitals at the cost of local funds aided by a grant from the Government. The Bangalore Civil and Military Station Committee has introduced very stringent by-laws for the licensing of all dogs. These are the most stringent rules yet in force in India against rabies.

The Asiatic Society.

The medical section of the Asiatic Society had recently a discussion on Hepatitis and Hepatic Abscess. Lieutenant-Colonel H. W. Pilgrim, I.M.S., read a most interesting paper. General support was given to the ipecacuanha treatment reintroduced by Major L. Rogers, I.M.S. A long but interesting paper on Epidemic Dropsy was read by Dr. H. N. Ghose at the Calcutta Medical Club.

The Bombay Medical and Physical Society.

At the annual meeting of the Bombay Medical and Physical Society the new committee was elected, with Dr. N. F. Surveyor as secretary. Dr. S. A. Powell showed a heart, the left ventricle of which was ruptured by a blow of the fist. With the exception of a small patch of atheroma in the transverse portion of the aorta, the body was otherwise healthy. Dr. L. G. Gate showed a curious case of syphilitic affection of the humerus.

New General Hospital, Lahore.

The chief topic of medical interest is the new General Hospital to be built in connexion with the very liberal subscriptions gathered to commemorate the love for the late King Edward VII. There are two sites for the same at present being considered. One of them, which is the one most likely to benefit the locality of the present hospital, will open up an existing insanitary site. The Punjab will thus come to the fore in the matter of a first-class up-to-date hospital like other presidencies. The new health officer is busy with the local difficulties *re* sanitation. A proposal has been put forward for the creation of a Punjab medical society, and seeing that there are a large number of practitioners and plenty of material, the outlook for this is promising. Besides, it will bring together the various members of the fraternity.

United Provinces Exhibition.

The all-absorbing topic at Allahabad is the United Provinces Exhibition. Probably no exhibition in India has been worked out on so large a scale and in so business-like a manner. The hygiene section is full of interest.

Sanitary Matters at Simla.

Sanitary matters are the only medical features to note at present. The special journal named *Paludism*, edited by Major

S. P. James, I.M.S., has now been issued in connexion with the recommendations of the Simla Conference on Malaria. The special class at Amritsar for malaria investigations has just closed its second course. The Pasteur Institute at Kasauli continues to do good work, while too much praise cannot be given to the keen work carried out by Lieutenant-Colonel David Semple, R.A.M.C. Colonel R. H. Firth, R.A.M.C., Army Headquarters, has issued a special paper to all his officers on the examination of drinking water.

General.

The chief general medical subject of interest over the greater part of India is, at this season, the plague. Its seasonal rise has already been most pronounced in some presidencies. With an early winter, and possibly a severe one, it is more than possible the plague will be felt with some severity in certain localities. Anything about plague is of interest to India. We now have the views of two young plague advisers, and this has in one province been connected with a special committee chiefly of non-medical gentlemen. General rat trapping has been condemned. The details of the report have already been made public. No doubt each of us has his own ideas, but it seems strange that with a disease which is affecting all presidencies the general lines to fight it should not be the same throughout the country. If anything is done in any one province it should surely be subjected to a special committee of experts before it is permitted to be adopted. What is wanted is a *uniform* fight against the disease throughout the country rather than changes introduced by the varying views of men who, from the exigencies of the service, happen to be in charge temporarily. I may be wrong, but it seems to me that if rat destruction is to be condemned as a measure of importance in the Punjab it is also time it was abolished in other provinces. But, in the interest of the public, before such measures are abolished it would be as well to have the verdict of a body of men who should be permanently established until plague ceases, and whose verdict should be final.

Dec. 28th, 1910.

NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

The Soya Bean.

WITHIN the past three years the outstanding merits of this pulse have come prominently to the front, and its export from Manchuria, where most of it is raised, has lately assumed very large dimensions. For the past 2000 years it has been used in North China for making bean curd, a thick nutritious jelly eaten daily by all classes of the people. A widely used vegetable oil is also expressed from it, the refuse left over serving for cattle food and manure for sugar plantations. Recent analyses have proved its nutrient superiority to all cereals. This bean, a product of the *Soja hispida*, a species belonging to the papilionaceæ, is indigenous to China, but it can be grown in Europe; there are reports of its successful culture in Russia, Germany, and France. It is easy to rear, does not demand special skill on the part of the farmer, and does not require specially favourable soil or climate. It is a cheap product, each bean when sown multiplying itself, on an average, 450 times. On account of its great nutrient value it is well worth medical attention, more particularly in diabetic cases, because of its comparatively small proportion of starch. *Composition.*—Dividing its constituents into four main groups: 1. The albumin forms about 40 per cent. of the bean. 2. Fats average 20 per cent. 3. Carbohydrates: The beans contain sugar to the amount of 8 to 11 per cent. It is a disaccharose, $C_{12}H_{22}O_{11}$, and closely resembles cane sugar. Starch (all soluble) never exceeds 10 per cent., which is much lower than wheat and other grains, where the proportion is about 70 per cent. 4. The mineral matter is high, varying from 4 to 6 per cent. Phosphorus, sulphur, sodium, potassium, calcium, and magnesium are present. The most abundant salt is sodium phosphate. Advocates of the fleshless diet have to contend with the large amount of indigestible cellulose which occurs in vegetarianism. This cellulose is present in 4 to 11 per cent. of the soya bean, but is very easily eliminated from the other products. Bean curd is entirely free from it. China is not a milk-drinking country, notwithstanding the high prevalence of tuberculosis which I have noted in previous letters. To replace the lack of milk the dried bean is ground up and mixed with water. The resultant emulsion makes a most excellent vegetable milk which resembles animal milk in that it coagulates. Wheat and other beans emulsified in the same way, if heated gently and acidified, will not coagulate as cow and bean milk do. Comparing this bean with wheat, it will be seen that it is richer than wheat in everything but starch. It contains nearly three times as much albumin, 15 times as much fat, and between two or three times as much mineral matter. For making biscuits, soup powder, infant and other foods, the soya bean will be widely used in future when its dietetic value becomes better known. It also forms a good basis for making candles and soap. Soya vinegar is the main constituent of several well-known piquant sauces. I append some comparative figures, the work of a French-trained Chinese chemist, Mr. Li Yu Ying, from which it can be noted how favourably this bean compares with other foods in common use. *Minerals.*—Soya bean, 4·4 per cent.; rice, 1·2 per cent.; eggs and meats, 1 to 1·5 per cent. *Starch.*—Rice, 74·4 per cent.; wheat, 66·70 per cent.; flat beans, 57·6 per cent.; soya bean, 11·06 per cent. *Amount of various foodstuffs equivalent to 100 grammes of gelatin.*—Soya bean, 264; bean curd, 475; flat bean, 812; unboiled rice, 1176; bread, 1205; boiled rice, 3616; vegetables, 7142; potatoes, 7790. I understand this bean was introduced into England over a hundred years ago, but no attempt was made to cultivate it. English firms are now entering the field and taking a large part in the exportation of the bean from Manchuria. This increasing demand is shown in the customs returns. Thus, whereas the export last year was 200,000 tons, it is almost 500,000 tons this year.

Plague in Manchuria.

A virulent epidemic has broken out at Tsitsihar and the neighbourhood of Harbin on the Russo-Manchurian frontier. The daily returns of deaths have been from 500 to 600, and the majority of cases are reported as being pneumonic plague. This outbreak is an instance of the persistence of B. pestis under extremes of temperature. It is probably no exaggeration to say that North-Western Manchuria is one of the coldest parts of the world. 49° below zero (81° of frost F.) have been recorded in winter, and, at the present time of the year, when a north wind blows, life is almost unbearable in the open for more than short periods of time. It is too cold for snow unless heavy falls occur at the very beginning of winter. There is perpetual sunshine and the cold is very dry. Under such climatic conditions the inhabitants and animals keep indoors as much as possible and infection is easily spread, especially when the plague is of the pneumonic variety. The Russian authorities, at the request of the Siberian Railway Administration, have been active in sending troops and doctors, and have established a picket line of Cossacks on the Manchurian frontier to guard against the further ingress of Chinese coolies, who, in order to evade the rigorous medical inspection at Pogranichnaya railway station, leave the train on the Chinese side of the frontier and cross the boundary on foot. A cordon has also been drawn round the plague-infected area and only Europeans and a few known Chinese are allowed to cross. These vigorous measures have aroused some resentment among the Chinese, who in some instances, no doubt due to difference of language, customs, and habits, were roughly handled. The Chinese prefect at Harbin received official orders from Peking to organise plague preventive measures and to establish isolation hospitals and medical inspection bureaux. To help him in this work the Government has sent Dr. Mesny, a French medical man with previous plague experience, and Mr. Gnoh Lean Tuck, M.D. Camb. Dr. Tuck had a fine medical career in England, where he held research scholarships in pathology and bacteriology, afterwards studying at the Hygienic Institute, Halle, and the Pasteur Institute, Paris. These two medical men have been given a free hand by the Imperial Government and are to coöperate with the Russian authorities to bring every preventive measure possible into effect. This is noteworthy as being the first occasion in which the Government has shown itself alive to the dangers of allowing the unchecked spread of an epidemic outbreak.

The Russian Government has put its plague measures in the hands of Dr. Zabolotnui, a noted bacteriologist who made a reputation for himself in plague investigation in Odessa some time ago. He has been given a staff of 15 doctors to assist him. The latest news to hand is that the epidemic is showing a diminution in Manchuria, where the mortality is less than during the previous week, but there are still a good many cases and deaths in Harbin, sufficient to cause anxiety. I am unable to give official rates, as no figures have as yet been published, though it is said the deaths have hitherto numbered some hundreds per week.

Peking, Dec. 24th, 1910.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF ENGLAND.—At the Second Professional Examination in Anatomy and Physiology, held on Jan. 5th, 6th, 9th, and 10th, for which 81 candidates presented themselves, of whom 51 were approved and 30 were rejected, the following gentlemen were successful:—

Ahmed Abdelal and Francis Dighton Annesley, Guy's Hospital; Edgar Bernard Argles, St. Mary's Hospital; George Aspinall-Stivala, St. Bartholomew's Hospital; Henry Cecil Billings, London Hospital; Harold James Bower, B.A. Cantab., Cambridge University; Charles Frank Burton, London Hospital; John Stanley Cocks, Guy's Hospital; Louis David Cohen, London Hospital; George Malcolm Coope, Manchester University; Denis Clarence Cooray, L.M.S. Ceylon, Ceylon Medical College; Eric David Despard Davies, Cambridge University; Robert Ellis, Birmingham University; Edward Dance Fountain, St. Mary's Hospital; Vrasplital Gabriel, L.M.S. Ceylon, Ceylon Medical College; Alexander Percival Green, London Hospital; Harold Stanley Groves, Guy's Hospital; Howell Gwynne-Jones, London Hospital; Mohammad Zaky Hanafy and Arthur Martin Henry, L.D.S. Eng., Guy's Hospital; John Higgins, St. Mary's Hospital; Thomas Henry Jackson, Charing Cross Hospital; John Wallace Kemp, Guy's Hospital; Harold Dunmore Lane and David Lewis, London Hospital; Joseph Lloyd, Westminster Hospital and King's College; Donald Henry McDonald and Douglas Duncan Malpas, Middlesex Hospital; Percy Uvedale Mawer, St. Bartholomew's Hospital; James Denis Mercer, Manchester University; Harold Parker, Leeds University; Mahamarrakkelegey Gregory Perera, Ceylon Medical College and University College; Michael Gladstone Pettigrew, Sheffield University; Alfred Cleveland Pickett, B.A. Cantab., Cambridge University and St. Thomas's Hospital; William Reginald Pryn, Guy's Hospital; Herbert Jack Rawson, St. Thomas's Hospital; Philip Hugh Rawson, London Hospital; Edward Ebenezer Samaraweera, Ceylon Medical College and King's College; Charles Pearse Crodacott Sargent, St. Bartholomew's Hospital; Abdel Khalek Selim, Guy's Hospital; Jagannath Vishnu Shirgaokar, L.M.S. Bombay, Bombay University and Middlesex Hospital; Charles Rees Smith and Frederick Lionel Spalding, Guy's Hospital; William Allan Stewart, London Hospital; Evelyn Alexander Sutton, Charing Cross Hospital; Thomas Harold Thomas, Arthur Roland Turtle, and James Anderson Watson, London Hospital; John Delafosse Wilkinson and Sydney Arthur Wilkinson, St. Thomas's Hospital; and Leslie Douglas Wright, Guy's Hospital.

At the quarterly examination in Practical Pharmacy, held on Jan. 12th, the following candidates were approved:—

Ralph Cay Briscoe, Oxford University and St. George's Hospital; Ronald Edgar Russell Burn, St. Bartholomew's Hospital; Maurice Burnett, King's College and St. George's Hospital; Percy Herbert Burton, London Hospital; Allan Stanley Coalbank, St. Bartholomew's Hospital; Joseph Copians, St. George's Hospital; John Hamilton Cumming, Cambridge University and St. Bartholomew's Hospital; William Dale, St. George's Hospital; George Arthur Ewart, B.A. Cantab., Cambridge University and St. George's Hospital; Samuel Amery Faulkner, Manchester University; Bernard Grellier, L.D.S. Eng., Charing Cross Hospital; Harold Kinder Griffith, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; John Cecil Hallinan and Walter Parker Harrison, L.D.S. Eng., Charing Cross Hospital; George Ashby Hooton, St. Bartholomew's Hospital; Edward Eastaugh Johnson, private study; Frank Winter Lawson, Guy's Hospital; Vernon Edmund Lloyd and Reginald Hutchinson Lucas, Guy's Hospital; George Oliver Maw, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Harry Millett, Guy's Hospital; George Nelson, Charing Cross Hospital; Lily Fanny Pain (Miss), Royal Free Hospital; John Lansdowne Perceval, Harry Platts, and Courtenay Henry Gerard Pochin, Guy's Hospital; Frank Aubrey Powell, B.A. Cantab., Cambridge University and London Hospital; Peter Warwick Ransom, Cambridge University and St. Bartholomew's Hospital; Edward Gordon Reeve, Guy's Hospital; Thomas Conrad Reeves, London Hospital; George Andrew Russell, Birmingham University; David Scott, London Hospital; Alan Ker Soutar, B.A. Cantab., Cambridge University and St. Mary's Hospital; Robert Cyril Wilmer Staley, Guy's Hospital; Elliott John Storer, St. Bartholomew's Hospital; Oscar Ramsay Unger, University College Hospital; Bernard Thomas Verver and Walter Palmer Vicary, Guy's Hospital; Ernest White, L.D.S. Eng., Sheffield University and Guy's Hospital; and Arthur Tudor Williams, London Hospital.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the Preliminary Science Examination for the Licence in Dental Surgery of the Royal College of Surgeons of England the following gentlemen were approved in the subjects specified below:—

Chemistry and Physics.—Ronald William Anderson-Jardine, Middlesex Hospital; Reginald Willis Ballard, Guy's Hospital; Henry Claude Carter, Middlesex Hospital; James Douglas Crawford, Liverpool University; George Lambert Cutts, Herbert James Edwards, B.A. Wales, and Arthur Gerald Forrest, Guy's Hospital; Reginald John Inder, Northern Polytechnic Institute; Howell James, Plymouth Technical School; Sydney Emil Johnson, Tonbridge School; Oswald Nelson Mash, Guy's Hospital; Glenn Fowler Musson, Leeds Institute of Science and Art; Reginald Harry Rix, Norwich Technical Institute; Stanley Stevens, City of London College; and Eric Edgar Wookey, Bristol University.

Chemistry.—Kevern Batten, Bristol University; Walter Alexander Crane, Liverpool University; Arthur Thomas Dally, Charing Cross Hospital; Joseph James Luckett Hollington, Brighton Technical College; Eustace Fernando Llarena, Guy's Hospital; Wallis John Milton, Bristol University; Frank Edwin Rudd, Norwich Technical Institute; and Harold Vincent Wolfenden, Halifax Technical School.

Physics.—Leslie Alabone, Brighton Municipal Technical College; Ernest Archibald Dawson, West Ham Technical Institute; Reginald Fox, Liverpool Technical School; and Eric Carson Nicholls, Guy's Hospital.

At a quarterly meeting held on Jan. 12th the following diplomas were conferred upon the undermentioned gentlemen, who have now complied with the respective by-laws:—

Diploma of Fellow.—Walter Burford Johnson, M.B., B.S. Lond., M.R.C.S., L.R.C.P., St. Thomas's Hospital.
M.R.C.S.—David Scurlock, St. Mary's Hospital.
L.D.S.—Gerald John Harborow and Linthall Harry Leatherby, Charing Cross and Royal Dental Hospitals.

FOREIGN UNIVERSITY INTELLIGENCE.—*Amsterdam:* Dr. C. T. Van Valkenburg has been recognised as *privat-docent* of the Anatomy of the Nervous System.—*Bologna:* Dr. Alessandro Codivilla has been appointed Extraordinary Professor of Orthopædic Surgery.—*Brussels:* A School of Tropical Medicine has been established. The Belgian Ophthalmological Society has elected the following as Honorary Foreign Members: Dr. Angelucci of Naples, Dr. Axenfeld of Freiburg, Dr. Hess of Würzburg, Mr. W. H. H. Jessop of London, Dr. Landolt of Paris, and Dr. Straub of Amsterdam.—*Erlangen:* Dr. L. Hauck, *privat-docent* of dermatology, Dr. E. Kreuter, *privat-docent* of surgery, and Dr. Weichardt, *privat-docent* of experimental therapeutics, have been granted the title of Extraordinary Professor.—*Freiburg:* Dr. Bacmeister has been recognised as *privat-docent* of Medicine.—*Gratz:* Dr. Erich Baumgarten and Dr. Eduard Urbantschitsch have been recognised as *privat-docenten* of Odontology.—*Halle:* Dr. Bencke of Marburg has been appointed Professor of Pathological Anatomy in succession to Dr. Eberth, who is retiring.—*Jena:* Dr. Kionka, director of the Pharmacological Institute, has been granted the title of Honorary Professor.—*Kieff:* Dr. W. Dobromysloff of Tomsk has been appointed Professor of Operative Medicine and Topographic Anatomy.—*Marburg:* Dr. P. Esch of Greifswald has been recognised as *privat-docent* of Gynæcology.—*Munich:* Dr. R. Hecker and Dr. J. Trumpp, *privat-docenten* of Pædiatry, Dr. Baisch, *privat-docent* of Gynæcology, Dr. Seeman, *privat-docent* of Physiology, and Dr. Notthaft, *privat-docent* of Urology, have been granted the title of Extraordinary Professor.—*New York (Polyclinic Medical School and Hospital):* Dr. David Edward Hoag has been appointed Lecturer on Neurology and Psychiatry.—*Palermo:* Dr. A. Dionisi of Modena has been appointed to the chair of Pathological Anatomy.—*Pavia:* Dr. Carlo Bezzola and Dr. Luigi Preti have been recognised as *privat-docenten* of Internal Pathology.—*Philadelphia (Medico-Chirurgical College):* Dr. Horatio C. Wood, jun., has been appointed to the chair of Materia Medica and Therapeutics in succession to the late Dr. Shoemaker.—*Philadelphia (University of Pennsylvania):* Dr. Allan Smith has been appointed to the chair of Tropical Diseases.—*Pisa:* Dr. Arbace Pieri has been recognised as *privat-docent* of Internal Pathology, and Dr. Filippo Neri as *privat docent* of Hygiene and State Medicine.—*Prague (German University):* Dr. J. Gad, Professor of Physiology, is retiring at the close of the present winter session.—*Rome:* Dr. Guido Senni has been recognised as *privat-docent* of Experimental Pathology, and Dr. Vincenzo Nicoletti as *privat-docent* of Orthopædic Surgery.—*Rostock:* Dr. Gerhard Hosemann has been

recognised as *privat-docent* of Surgery.—*San Francisco (University of California):* Dr. H. B. Graham has been appointed Adjunct Professor of Hygiene.—*Saratoff:* Dr. B. Slofftsoff of the Military Medical Academy, St. Petersburg, has been appointed to the chair of Pharmacology and Toxicology.—*Sienna:* Dr. Cesare Biondi of Cagliari has been appointed to the chair of Forensic Medicine in succession to Dr. Mirto.—*Strasburg:* Dr. Paul Uhlenhuth, Director of the Government Bacteriological Department, has been appointed to the Chair of Hygiene in succession to the late Professor J. Forster. Dr. Gildemeister, *privat-docent* of Physiology, Dr. Schlesinger, *privat-docent* of Children's Diseases, and Dr. Fuchs, *privat-docent* of Anatomy, have been granted the title of Professor. Dr. Vogt, Oberarzt of the Children's Clinic, has been recognised as *privat-docent* of Pædiatry.—*Tübingen:* Dr. Gottlieb Olpp has been recognised as *privat-docent* of Tropical Diseases.—*Vienna:* The Austrian Cancer Campaign Society has elected as Honorary Foreign Members Dr. Bashford of London, Dr. Borrel of Paris, Dr. Czerny of Heidelberg, Dr. Ehrlich of Frankfort, Dr. Jensen of Copenhagen, Dr. Orth of Berlin, and Dr. Winter of Königsberg.—*Würzburg:* Dr. H. Kelly has been recognised as *privat-docent* of Pathological Anatomy.—*Zürich:* Dr. Schuhmacher has been recognised as *privat-docent* of Surgery.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the above society was held on Jan. 11th, at 11, Chandos-street, Cavendish-square, Dr. G. F. Blandford, the President, being in the chair. Eight directors were present. Five medical men were elected members of the society. Since the last court one of the vice-presidents, Dr. James E. Pollock, had died. Dr. Pollock was one of the oldest members of the society, being elected a member in 1866. The sum of £1281 was voted for the payment of the half-yearly grants to the widows and orphans who are on the books of the society. A legacy of £200, free of duty, was received from the executors of the late Miss Emma H. Peregrine. The invested funds now amount to £100,900. Membership is open to any registered medical practitioner who at the time of his election is resident within a 20-mile radius from Charing Cross; the subscription is 2 guineas per annum. Special terms are made for life membership, the sum payable being dependent on the age of the applicant. The next election will be on April 12th, and application forms for membership must reach the secretary on or before March 22nd. Any further information may be obtained from the Secretary at the offices of the Society, 11, Chandos-street, Cavendish-square, London, W.

AN APPEAL FOR NEW LABORATORIES FOR UNIVERSITY COLLEGE.—In 1909 an appeal was made by a committee of University College, with the approval of the Senate of the University of London, for the sum of £70,000 for the erection of new chemical laboratories adjacent to the College. £25,000 of this amount were for the purchase of a selected site, the College having an option on it until Dec. 31st, 1910. Owing to the disturbing influences of the death of King Edward and a double General Election last year, the work of the appeal committee, of which Prince Arthur of Connaught is president, was seriously interfered with, and for this reason the option on the site has been extended to Jan. 31st. Of the £25,000 required only £14,000 have so far been secured, so that £11,000 remain to be collected. The present laboratories are entirely inadequate, and the importance of chemical research, both to the general advance of science and to commercial prosperity, is too obvious to need urging. Donations or promises may be sent to Prince Arthur of Connaught at University College, London, and must be prompt to be of any avail.

THE NEW LONDON DERMATOLOGICAL SOCIETY.—A new society has been formed for the study of diseases of the skin, the membership of which is open to any duly qualified medical practitioners. The inaugural meeting of the New London Dermatological Society was held on Jan. 16th at the offices of the British Medical Association, under the chairmanship of Dr. W. Knowsley Sibley. Dr. Phineas S. Abraham was unanimously elected the first president; Dr. William Griffith, honorary treasurer; and Dr. Norman Meachen (11, Devonshire-street, W.) and Dr. David Walsh (27, Welbeck-street, W.), honorary secretaries. In thanking those present for the honour conferred upon him, Dr. Abraham said that the new society would be supplemental or auxiliary to the Dermatological Section of the Royal Society of Medicine, its founders having no desire to be antagonistic to that body.

THE Queen has sent her annual subscription of £105 to King Edward's Hospital Fund for London.

NEWTON ABBOT (DEVON) WORKHOUSE INFIRMARY.—At the last meeting of the Newton Abbot board of guardians a provisional tender of £3074 was accepted for the erection of additional buildings for the workhouse infirmary.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. George Frederick Barker, formerly professor of physiological chemistry and toxicology in Yale.—Dr. John C. Munro, formerly lecturer in surgery in Harvard University.—Dr. Eustache, formerly professor of clinical midwifery in the University of Lille.—Dr. A. Smirnoff, professor of histology and embryology in the University of Tomsk.—Dr. Maximo Cienfuegos, professor of ophthalmology in the University of Santiago, Chile.—Dr. José Ortis y Herrara, formerly rector of the University of Cordova, and subsequently Governor of the Province. He died in Buenos Aires, aged 65 years.

AN INTERESTING CASE UNDER THE WORKMEN'S COMPENSATION ACT.—At Liskeard (Cornwall) on Jan. 11th, before his honour Judge Granger, a local farmer applied for the termination of an award under the above Act in respect to one of his labourers. The man had been injured through a horse of the farmer bolting and injuring his arm. The labourer had been awarded about 11*s.* weekly since April, but it was contended that the continuance of the disablement was entirely due to the respondent having neglected to work and use his arm, as ordered by the medical attendants. The respondent, however, contended that it was the injury which rendered him unable to follow his work. Medical evidence stated that the man had been urged to work his arm, and warned that if this was neglected he would never have the proper use of the limb; but the man refused to make any movements with the arm, although he gave no reason for his conduct. His honour said that "it was not everybody who could persist in giving themselves pain in order to arrive at what might not even be a definite end, it was more than could be expected," and he eventually dismissed the application.

ASSOCIATION OF MEDICAL OFFICERS OF HEALTH.—A council meeting of this association was held at the Holborn Restaurant on Jan. 13th, Dr. F. G. Crookshank being in the chair. The Order of the Local Government Board, 1910, relative to medical officers of health and sanitary inspectors, was discussed and the following resolution was unanimously carried:—

We welcome the measure of security of tenure to the Medical Officers of Health by the Order and recognise with satisfaction that the Board does not differentiate therein with respect to conditions of tenure between whole and part time medical officers of health, but regret the Board has not so far seen its way to assimilate the securing of tenure of medical officers of health to that enjoyed by Poor-law medical officers, and to make provision for superannuation in suitable cases.

The council also discussed the memorandum accompanying the Order, and it was resolved:—

That this council notes with extreme regret that the Local Government Board specially express an opinion that in the case of medical officers of health engaging in private practice, their private interests are apt to conflict with their public duties. For even if this opinion be correct it is obvious that any argument deducible therefrom applies with even greater force to medical officers of health who are entirely dependent upon their official salaries.

SCHOOL INSPECTION IN NEWPORT.—When the medical inspection of school children was first undertaken by the Newport education committee the medical officer of health, Dr. J. Howard-Jones, was appointed school medical officer, and an assistant medical officer was also appointed. The education committee has now decided that the medical department of the schools shall be separated from the health department of the town, and that Dr. Howard Jones shall no longer be school medical officer, but that his services shall still be available as expert adviser to the committee. Dr. H. R. Burpitt, who is now assistant medical officer, is to be appointed school medical

officer, and his duties are to include attendance at the school clinic which it is proposed to establish in Newport. The local medical practitioners consider that the work of the clinic should be in the hands of the Newport medical men and should not be undertaken by a whole-time official. In spite, however, of their protests, the course indicated has been adopted.

THE PLYMOUTH MEDICAL CHARITIES.—The late Mr. Henry Elliott Tracey-Elliott of Plymouth has bequeathed £3000 to the South Devon and East Cornwall Hospital, and £2000 each to the Plymouth Public Dispensary and the Royal Plymouth Eye Infirmary.

THE BRISTOL MEDICAL CHARITIES.—During 1910 the employees of Messrs. W. D. and H. O. Wills of Bristol voluntarily contributed £737 for the Bristol medical charities, and the workpeople of Messrs. J. and S. Fry collected £631 for the same cause.

BOOKS, ETC., RECEIVED.

ALLENSON, R. H., LIMITED, Racquet-court, 114, Fleet-street, London, E.C.

Formation of Character. By Rev. J. B. S. Watson, M.A., Chaplain of H.M. Prison, Brixton, London. With Preface by Rev. G. P. Merrick, M.A., M.B., Formerly Chaplain-Inspector of H.M. Prisons. And a Foreword on Industry. By Andrew Whitlie, Esq., of the Commercial Bank of Scotland, London. Second Edition. Price, 1s. 6d. net.; by post, 1s. 9d.

BAILLIÈRE, TINDALL, AND COX, London.

Manual of Medicine. By Thomas Kirkpatrick Monro, M.A., M.D. Third Edition. University Series. Price 15s. net.

FISCHER, GUSTAV, Jena.

Handbuch der Vergleichenden Physiologie. Herausgegeben von Hans Winterstein in Rostock. Zwölfte Lieferung. Band IV. Physiologie der Reizaufnahme, Reizleitung, und Reizbeantwortung. Erste Hälfte. Price M.5.

LEWIS, H. K., London.

"Salvarsan" or "606" (Dioxy-Diamino-Arsenobenzol), Its Chemistry, Pharmacy, and Therapeutics. By W. Harrison Martindale. Ph.D. Marburg, F.C.S., and W. Wynn Westcott, M.B. Lond., D.P.H., H.M.'s Coroner for North-East London. Price 5s. net.

SCHULZE, OTTO, AND COMPANY, 20, South Frederick-street, Edinburgh. (STECHERT, G. E., AND COMPANY, New York.)

Text-book of Nervous Diseases for Physicians and Students. By Professor H. Oppenheim of Berlin. Fifth enlarged and improved edition. Authorised Translation by Alexander Bruce, M.D., F.R.C.P.E., LL.D., Physician to the Royal Infirmary, Edinburgh. Two volumes. Price not stated.

STATE COMPANY, THE, Publishers, Columbia, S.C.

Pellagra. By Dr. A. Marie, Physician to the Asylums Department of the Seine, Editor-in Chief, Archives de Neurologie. With Introductory Notes by Prof. Lombroso. Authorised translation from the French by C. H. Lavinder, M.D., Passed Assistant Surgeon, U.S. Public Health and Marine Hospital Service, and J. W. Babcock, M.D., Physician and Superintendent, State Hospital for the Insane, Columbia, S.C. With Additions, Illustrations, Bibliography, and Appendices. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALDOUS, GEORGE FREDERICK, F.R.C.S. Edin., M.R.C.S., L.R.C.P. Lond., L.S.A., has been appointed Honorary Surgeon to the South Devon and East Cornwall Hospital, Plymouth.

APPLEYARD, JAMES, L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer by the Shaftesbury (Dorset) Board of Guardians.

BALY, A. LIONEL, M.R.C.S., L.R.C.P. Lond., has been appointed Chief Medical Officer of the Infirmary and Workhouses to the Lambeth Board of Guardians.

BOON, J. E., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Clinical Assistant to the Samaritan Free Hospital.

BOVEY, THOMAS WILLIAM WIDGER, L.R.C.P. Lond., M.R.C.S., has been appointed Public Vaccinator for the Bampton District by the Tiverton (Devon) Board of Guardians.

CARGILL, L. VERNON, F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Senior Ophthalmic Surgeon to King's College Hospital.

CHALMERS, W., M.B., Ch.B. Edin., has been appointed House Surgeon at the Swansea Hospital.

CLEGG, SYDNEY J., M.B., Ch.B. Manch., D.P.H., has been appointed Resident Medical Assistant at the City Hospital for Infectious Diseases, Newcastle-upon-Tyne.

CORBETT, DUDLEY, L.R.C.P. Lond., M.R.C.S., has been appointed Clinical Assistant to the Samaritan Free Hospital.

FARRELL, L. J., L.R.C.S. Irel., L.A.H. Dub., has been appointed Visiting Medical Officer to the Dublin South Union Board of Guardians.

FENWICK, CHARLES, L.R.C.P. & S. Edin., has been appointed Medical Officer for the Cheriton Bishop District of the Crediton (Devon) Union.

GORDON, JAMES EDWARD, L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Physician to the Salisbury Infirmary.

HAYCROFT, CHARLES HENRY, M.R.C.S., L.S.A. Lond., has been appointed a District Medical Officer by the Crediton (Devon) Board of Guardians.

INMAN, E., M.B., B.S. Durh., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ammanford District of the county of Carmarthen.

MACDONALD, PHILIP NORMAN MACKAY, M.D., Ch.B Edin., has been appointed District Medical Officer by the Tiverton (Devon) Board of Guardians.

MUNDEN, W. P. HENLEY, M.B., B.S. Lond., has been appointed Clinical Assistant to the Samaritan Free Hospital.

PAGE, C. H. W., M.D. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Act for the North Walsham District of the county of Norfolk.

PATTISON, C. R. M., L.R.C.P., L.R.C.S. Irel., has been appointed Medical Officer for the Ballyward Dispensary District, Banbridge Union.

POWNE, LESLIE, M.R.C.S., L.S.A., has been appointed Medical Officer for the Newton St. Cyres and Shobrook Districts by the Crediton (Devon) Board of Guardians.

SANKEY, WILLIAM OCTAVIUS, M.D., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer by the Newton Abbot (Devon) Board of Guardians.

TATTERSALL, NORMAN, M.B., B.S. Lond., M.B., Ch.B. Vict., has been appointed House Surgeon at the Cancer Hospital.

THOMPSON, GEORGE W., M.B. Edin., F.R.C.S. Eng., has been appointed Ophthalmic Surgeon to the Hospital for Epilepsy and Paralysis and other Diseases of the Nervous System.

TUCKER, JOSEPH, M.R.C.S., L.S.A., has been appointed Medical Officer for the Chawleigh District of the Crediton (Devon) Union.

WILLIAMS, C. V., has been appointed House Physician at the Swansea Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN POORHOUSE.—Senior Resident. Salary £200 per annum, with board.

BRECKNOCK COUNTY AND BOROUGH INFIRMARY.—Resident House Surgeon, unmarried. Salary £120 per annum, with apartments, board, &c.

BRIGHTON, SUSSEX, COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, with board, residence, and washing.

BRISTOL, COSSHAM MEMORIAL HOSPITAL, Kingswood.—House Surgeon. Salary £50 per annum, with board, lodging, and washing.

BRISTOL ROYAL INFIRMARY.—Two House Physicians and One House Surgeon. Salary £100 each per annum. Also One Obstetric and Ophthalmic House Surgeon, and One Throat, Nose, and Ear House Surgeon. Salary £75 each per annum. Also Casualty Officer for six months. Salary £50 per annum. Apartments, board, and laundry are provided.

BURNLEY, VICTORIA HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with residence, board, and washing.

CAPETOWN, SOUTH AFRICAN COLLEGE, South Africa.—Two Professors of Human Anatomy and Physiology. Salary at rate of £500 per annum.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, washing, and residence.

DELAMERE FOREST, CHESHIRE, CROSSLEY SANATORIUM.—Assistant Medical Officer. Salary £100 per annum, with board, apartments, and laundry.

ENNISKILLEN, FERMANAGH COUNTY HOSPITAL.—House Surgeon. Salary £72 per annum.

HARRIS PARISH COUNCIL.—Medical Officer and Public Vaccinator. Salary £110 per annum.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Honorary Dental Surgeon.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Fourth Anæsthetist. Salary £15 15s. per annum.

HULL ROYAL INFIRMARY.—Assistant House Surgeon. Salary £100 per annum, with board and lodging.

LINCOLN COUNTY HOSPITAL.—Senior House Surgeon, unmarried. Salary £125 per annum, with board, lodging, and washing.

LIVERPOOL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Mount Pleasant.—Assistant Medical Officer and Pathologist. Salary £200 per annum.

LIVERPOOL INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and washing.

MAIDSTONE, KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer, unmarried. Salary £175 per annum, with quarters, attendance, &c.

MANCHESTER CORPORATION, WITHINGTON COMMITTEE.—Medical Officer of Health. Salary £250 per annum.

MANCHESTER, CRUMPSALL WORKHOUSE.—Junior Resident Assistant Medical Officer, unmarried. Salary £110 per annum, with apartments, washing, &c.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Parkplace, Cheetham Hill-road.—Anæsthetist. Salary £15 per annum.

MIDDLESBROUGH, NORTH ORMESBY HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, with apartments, board, washing, and attendance.

NEWCASTLE, Co. WICKLOW, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION FOR IRELAND.—Junior Resident Medical Officer. Salary £75 per annum, with residence and board.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Assistant Surgeon.

PONTYPRIDD AND DISTRICT COTTAGE HOSPITAL.—Honorary Consulting Surgeon and Honorary Consulting Gynæcologist.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Pathologist. Salary £50 per annum. Also Honorary Anæsthetist once a week. Salary £20 per annum.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Clinical Assistants for six months. Also House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Medical Officer in Charge of Department for X Rays and Electro-therapy. Salary at rate of £60 per annum.

SOUTHAMPTON, FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Honorary Medical Registrar.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House Surgeon. Salary £120 per annum, with board and lodging.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Brownhills, in the county of Stafford; at Glenavy, in the county of Antrim; and at Dunfermline, in the county of Fife.

THE Secretary of State for the Home Department, Whitehall, S.W., gives notice of a vacancy as Medical Referee under the Workmen's Compensation Act 1906, for County Court Circuit No. 50, more particularly to Brighton, Lewes, Arundel, Chichester, Worthing, and Haywards Heath County Courts.

Births, Marriages, and Deaths.

BIRTHS.

BURGES.—On Jan. 14th, at Muswell Hill, N., the wife of Richard Burges, M.R.C.S., L.R.C.P., of a daughter.

FINIGAN.—On Jan. 15th, at Woodville-road, Ealing, the wife of D. O'C. Finigan, M.D., M.R.C.P., of a daughter.

ROBINSON.—On Jan. 6th, at West Lodge, Leominster, the wife of Charles Allen Robinson, M.B., B.C. Cantab., of a daughter.

MARRIAGES.

ATKIN—MUNNS.—On Jan. 7th, at Holy Trinity, St. Marylebone, W., Alfred H. Atkin, L.R.C.P., &c., of Clipstone-street, W., to Elizabeth A. Munns, of Upper Clapton, N.E.

MCSHEEHY—PATERSON.—On Jan. 11th, at the Church of the Sacred Heart, Wimbledon, Oswald William McSheehy, of the Royal Army Medical Corps, to Caroline Winifred Mary, eldest daughter of Colonel Henry Paterson, late of the 23rd Sikh Pioneers, and Mrs. Paterson of Longforgan, Wimbledon.

PRINGLE—BENEY.—On Jan. 14th, at the Congregational Church, Beckenham, John Pringle, M.D., of Whalley Range, Manchester, to Dorothy, elder daughter of Mr. and Mrs. W. A. Beney, of Johannisbad, Beckenham.

DEATHS.

COATES.—On Jan. 13th, at Bursledon House, Dawlish, Matthew Coates, M.D., F.R.C.S., Deputy Inspector-General of His Majesty's Hospitals and Fleets.

FULLER.—On Jan. 13th, at Wilbury-avenue, Hove, Thomas Fuller, M.D., aged 83 years.

PARSONS-SMITH.—On Jan. 16th, at Park-Hyrst, Croydon, Samuel Parsons-Smith, L.R.C.S.I., L.R.C.P.I., J.P., aged 68 years.

RIDLEY.—On Jan. 13th, at 6, Ellison-place, Newcastle-on-Tyne, Walter Ridley, M.B., M.S., F.R.C.S., aged 49 years.

WOOD.—On Jan. 10th, at Southbourne, Hants, Edwin Stanley Wood, L.R.C.P., L.M. Irel., M.R.C.S. Eng.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

ENCEINTE.

To the Editor of THE LANCET.

SIR,—The note in THE LANCET of Dec. 31st, 1910, upon the etymology of the word "*enceinte*" does not say anything as to the date of its introduction into the vocabulary of the polite Briton as a substitute for the older and more medical "pregnant" or for the more purely English "with child." I infer, however, from its non-occurrence in a list of similar euphemisms before me that it was not in use in the opening years of the last century. The list referred to is appended to a letter addressed to the editor of an unnamed newspaper, which I find in a scrap-book once the property of an ancestress in the west country, who, if internal evidence suggests that she did not herself compile the "album," wrote her name in it in 1832. The letter is signed James English, and dated "Cornwall, Aug. 5, 1813," the name used being, no doubt, like the letter, an example of the author's humour. He writes:—

> "Having had occasion of visiting London this spring, a place I have not been in these forty years before, I took up my quarters, by her particular desire, at a female cousin's of mine who lives in the neighbourhood of Grosvenor-square—a lady who, though not many years younger than myself, moves and delights in the top of the fashion, as much as if she was only twenty-one. Having rested myself the first night after so long a journey, I began, as natural, to inquire after our friends and relations in town; when, happening to ask particularly after a young niece of mine, who had been married about nine months before, I was told, with an air of seeming indifference, 'that she was in *confinement*.' Alarmed at this news, I exclaimed, 'Good G—! what has she done to incur this disgrace?' 'Disgrace!' replied my cousin. 'What disgrace can there be in an *accouchement*?' Here I was as much at a puzzle as ever, till, upon a further explanation, I was told that my niece was *lying-in*, and that *confinement*, or *accouchement*, was the fashionable word to convey the meaning of my '*horribly country phraseology*.' 'Ho! Ho! cousin,' says I, 'If this be the case, it will be but civil in you to give me a list of those fashionable phrases, that I may not disgrace you or myself, whilst I stay in the metropolis.' After some pause and a look of silent contempt, which showed a superiority of understanding, she complied, and as the catalogue may be beneficial to other travellers as well as myself I enclose you a copy for your useful and entertaining Paper, and remain, Sir, your most obedient humble servant, JAMES ENGLISH."

The cousin in the neighbourhood of Grosvenor-square must have been a lively old lady to judge from a list from which two or three items may be cited as being perhaps of some historical interest to readers of THE LANCET:—

> Apothecaries = Doctors, chemists, or medical men.
> Man-midwife = Accoucheur.
> Pregnancy = In a family way; or to speak poetically in that way in which "women wish to be who love their lords."
> Cutting off a leg or an arm = Removing a limb.
> Suckling of children = Feeding of infants.
> Corncutters = Chiropodists.

The report of a trial pasted on another page of the same tattered volume is a reminder of the difficulty under which apothecaries used to seek to recover their fees, and certainly, in respect of the observations of counsel, of the change in forensic manners. "In the Common Pleas, during the trial of an action brought by Messrs. Price and Thompson, surgeons and apothecaries, for medicine and *attendance* afforded to a pork butcher named Gynn who had got a sore toe, Sir James Mansfield observed, 'I think it is a terrible thing that an apothecary cannot charge attendance unless he gives physic, whether it's wanted or not.' The daughter of the butcher, it appeared, had also a sore finger and an opening draught had been given her. 'See, gentlemen,' said Serjeant Shepherd, 'because this poor young lady happens to scratch her finger, she is condemned to an opening draught! Take care of your fingers, gentlemen, or the Lord have mercy on your bowels!'" The evidence in this case, given by an apothecary, who described himself as "of the old school," upon his own practice with regard to charges, was that he "never directly charged for attendance, but that when he thought it ought to be considered he said so in a *modest* manner at the foot of the bill." The same gentleman, by the way, showed that even in those days a scientific witness might sometimes get his own back from a cross-examiner who handled him roughly, for when in order to show that the opening draught was necessary treatment he was pressed to say that butchers lived well and were often of a gross habit of body, he retorted, "Yes, Sir, I think all professions live well when they can. No doubt, Sir, you take your wine." Serjeant Vaughan, counsel for the plaintiff, to whom this was addressed, laid stress upon the physical attributes of butchers in terms of refined humour which

make one try to recall the name of the gentleman supposed to be the prototype of his learned brother Buzfuz. He said to the jury in the course of his speech, "Oh, gentlemen, I would that I could produce their butcher here! No doubt he has a carcase bursting at every pore! and a toe that would take a quarter of a pound of meal to poultice it! *A toe!* I daresay it would cover Lord Wellington's position. Gentlemen, you all know what a butcher is! Many an opening draught it must have taken to open him and many a tonic to shut him up again!" In spite of his eloquence, however, Serjeant Vaughan consented to withdraw the record and to allow his client to be non-suited on Sir James Mansfield expressing the opinion that the charges were too high, and the reporter, in conclusion, informs us that the litigation was over a bill of two guineas, which the defendant had actually consented to pay, but only after legal proceedings had been commenced. As he would not pay the costs as well the case came into court with the above result, presumably at the ultimate expense of the unhappy surgeons and apothecaries.

The same scrap-book, it may be mentioned, contains a long account of a young lady named M'Evoy, of Liverpool, who had become blind and who after being blind-folded in addition was able to distinguish by means of her finger-tips the colours and shapes of objects, to read print, and to declare the nature of articles in an amazing manner, the peculiarity of her feats being that glass was placed between her and the objects to be named, not, be it observed, with a view to making her task more difficult by preventing her from feeling them, but because the interposition of the glass actually assisted her, and because she could not exercise the same perception without it. This was before the days of music-halls, and apparently Miss M'Evoy was a retiring young lady who did not perform for gain, and shunned publicity. Perhaps, however, she may have been a well-known character of whom authoritative records exist accounting for her performances.

By the way, I have omitted to point out that the note on "*enceinte*," to which I have referred above, begins by mentioning its pronunciation as a puzzle to many, but gives no rule with regard to it. May I suggest that *enceinte* is pronounced as if it were spelt "*en-sainte*," the second syllable being indistinguishable from the feminine of the French word for holy, and that it is not possible to print an exact English equivalent, the nearest, perhaps, being the name of a well-known artist, the "einte" having much the same sound as the "ant" in cant or pantaloon, pronounced with a slight Cockney twang.

I am, Sir, yours faithfully,

Jan. 7th, 1911. A. A.

"606" ON TRIAL.

A PEKING correspondent sends us an extract from the *Peking Daily News* of Nov. 15th, 1910, stating that the Ehrlich-Hata 606 "will be ready to be supplied to the dispensaries and apothecaries in about four weeks time." It therefore calls on "the doctors and hospitals in China who intend to use this remedy quickly ..... to kindly send their orders at once to the nearest dispensary." "A native doctor," our correspondent writes, "who has no idea of antiseptics, &c., came to see me the other day, and told me he had ordered a quantity. When injected without attention to detail it will be interesting to see what mistakes occur." It is to be hoped that this "awakening of China" in respect of Occidental medicine will not be nipped in the bud by the chilling frosts of catastrophe.

UNQUALIFIED DENTAL PRACTICE.

To the Editor of THE LANCET.

SIR,—I would like to appeal to our medical brethren who have much and well-deserved influence with, and opportunities to educate, their patients. When those patients may need our services, can they not be helped to discriminate between qualified and unqualified dentists? Dental affairs before the well-known House of Lords' pronouncement were sufficiently deplorable, but since that surprising decision matters have become truly appalling! The unqualified do not hesitate to shamelessly assert immense superiority over qualified dentists, while they dub their shops or offices "Dental Surgery," "Dental Institute," "Dental Rooms," &c., and the public in consequence may be deluded into assuming that this class are registered dentists. I am sure that if the members of the medical profession would courteously take the trouble to point out to their patients the importance of seeing that any practitioner employed is registered, we should have, at any rate, a somewhat improved condition of things dental.

I am, Sir, yours faithfully,

Jan. 2nd, 1911. REGISTERED DENTAL PRACTITIONER.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1911:—

Feb. 20th–25th (Cairo).—Fifth International Congress for the Blind.
March 2nd–6th (Berlin).—Thirty-second Balneological Congress.
,, 23rd (Paris).—First Congress of French Medical Journalists.
April (Berlin).—German Surgical Congress. (Thirty-ninth Annual Meeting.)
April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
April 18th–20th (Paris).—Third Congress of Physiotherapy of French-speaking Physicians.
,, 19th–22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.
,, 20th–22nd (Groningen).—Thirteenth Nature and Medical Congress.
May 30th (The Hague).—International Congress on Opium.
May (Washington).—Conference on the Protection of Industrial Property. (Question of False Marking of Goods.)
May–October (Dresden).—International Hygiene Exhibition.
May–October (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May–October (?) (London, Shepherd's Bush).—Coronation Exhibition.
June (Paris).—First Congress of the International Medical Association for the Prevention of War.
,, (Los Angeles, Cal.).—American Medical Association.
June 5th–8th (Kolberg, Prussia).—Fifth International Congress of Thalassotherapy.
June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.
July (Birmingham).—British Medical Association.
July 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.
August 15th–21st (Dublin).—Royal Institute of Public Health.
,, 30th–Sept. 6th (Portsmouth).—British Association.
August or September (Berlin).—Third International Laryngo-Rhinological Congress.
September (Brussels).—Exhibition of Fractures.
,, (Turin).—International Congress of Pathology.
,, (Genoa).—International Exhibition of Marine Hygiene.
Sept. 11th–15th (Berlin).—National Congress for the Study and Prevention of Infantile Mortality (*Goutte de Lait*).
,, 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.
,, 18th–23rd (Sydney).—Australasian Medical Congress.
,, 18th–24th (Turin).—Fourth National Congress of Hygiene.
,, 24th–30th (Rome).—International Congress on Tuberculosis.
,, 25th–29th (Rome) Seventh International Congress of Dermatology and Syphilology.
October (Cologne).—International Congress of Criminal Anthropology.
Oct. 1st–4th (Liége).—Second Congress of Alimentation.
Dec. 4th–9th (Havana, Cuba).—American Public Health Association.
(Date not fixed) (Montreal).—Canadian Medical Association.
(Date not fixed) (Rome).—International Exhibition of Social Hygiene.
(Date uncertain) (Turin).—International Exhibition of Industry and Labour.

In 1912:—
Spring (London).—Second Optical Convention.
July (?) (Cologne).—International Congress of Nurses.
September (Prague).—International Congress of Radiology and Medical Electrology.
September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
,, Visit of German Medical Men to America.
Nov. 22nd–29th (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.

In 1913:—
(London).—Seventeenth International Congress of Medicine.
(London).—Historical Medical Exhibition. (Organised by Mr. Henry S. Wellcome.)
(Dresden (?)).—International Conference on Cancer.
(Washington).—Congress of American Physicians and Surgeons.
August (Buffalo).—Fourth International Congress of School Hygiene.

In 1914:—
(Vienna).—Third International Congress for Professional Diseases.

In 1915:—
(London).—International Prison Congress.
(London).—Imperial Exhibition (?)

THE following journals, magazines, &c., have been received:—*The Antivivisection Review, Internacio Medicino, The Nation in Arms, Peru To-day, Munchener Medizinische Wochenschrift, Wiener Medizinische Wochenschrift, Il Policlinico, Boston Medical and Surgical Journal, Gazetta Degli Ospedali e delle Cliniche, Revue Française de Médecine et de Chirurgie, Archives of the Roentgen Ray, West London Medical Journal, The Morningside Mirror, Allgemeine Wiener Medizinische Zeitung, Cotton Factory Times, Richmond and Twickenham Times, Journal of Anatomy and Physiology, Broad Arrow, Army and Navy Gazette, Times of India, Pioneer Mail, Engineer, Hertfordshire Mercury, Official Gazette of the United States Patent Office, American Journal of Clinical Medicine, Mining Journal, Optician, Deutsche Medizinische Wochenschrift, Annales des Maladies des Organes Génito-Urinaires, Indian Ambulance Gazette, Indian Engineering, Literary Digest, La Presse Médicale d'Egypte, Archives de Médecine et de Pharmacie Militaires, La Clinique Ophtalmologique, Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, Berliner Klinische Wochenschrift, Gazette Médicale de Paris, Archives Générales de Médecine, La Presse Médical Belge, The Practitioner, Nederlandsch Tijdschrift voor Geneeskunde, Il Morgagni, La Crónica Médica, Revue de Gynécologie, Gazette Hebdomadaire des Sciences Médicales de Bordeaux, La Belgique Médicale, South African Medical Record.*

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

MONDAY.
ODONTOLOGICAL SECTION (Hon. Secretaries—E. B. Dowsett, W. W. James): at 8 P.M.

Paper:
Mr. Charles Goulden: Some Inflammatory Conditions of the Eye due to Oral Sepsis.

TUESDAY.
MEDICAL SECTION (Hon. Secretaries—A. F. Voelcker, Sir John F. H. Broadbent, Bart.): at 5.30 P.M.

Papers:
Dr. A. E. Garrod: The Auscultation of Joints.
Dr. W. Essex Wynter: The Loss of Abdominal Movements in Pericarditis.

FRIDAY.
SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—J. P. Lockhart Mummery, T. R. Whipham, G. S. Haynes) at 11, Chandos-street, W.: at 4.30 P.M.

Cases and Specimens:
Dr. Eric Pritchard: (1) Intermittent Word and Letter Blindness; (2) Idioglosia.
Dr. T. R. Whipham: Enlargement of the Liver (for diagnosis).
Mr. Sydney Stephenson: Embolism of the Central Artery of the Retina in a Girl of 11½ Years.
Mr. H. S. Clogg: Sequestrum from a Case of Necrosis of the Jaw.

Papers:
Dr. F. Parkes Weber: Splenomegaly with Recurrent Jaundice, ending in Hepatic Cirrhosis and Ascites; with Remarks on the Splenomegaly of Inherited Syphilis in Children.
Mr. S. F. Rose: Ulcerative Stomatitis in Children.

SECTION OF BALNEOLOGY AND CLIMATOLOGY (Hon. Secretary—F. A. de T. Mouillot): at 5.30 P.M.

Paper:
Dr. Buckley (Buxton): Chronic Rheumatism in its Relation to Osteo-arthritis.

EPIDEMIOLOGICAL SECTION (Hon. Secretaries—W. H. Hamer, G. S. Buchanan): at 8.30 P.M.

Paper:
Dr. F. A. Bainbridge: The Ætiology and Epidemiology of Paratyphoid Fever and Food-poisoning.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Clinical Meeting. Cases will be exhibited by Dr. H. French, Dr. F. S. Palmer, Mr. M. Heath, Mr. C. Symonds, Dr. Bunch, Dr. Poynton, and others.

MEDICO-LEGAL SOCIETY, 11, Chandos-street, Cavendish-square, W.

TUESDAY.—8.30 P.M., Adjourned Discussion on the Workmen's Compensation Act (opened by Mr. A. S. Morley).—Dr. W. Asten: Traumatic Neurasthenia and the Workmen's Compensation Act.

WEDNESDAY.—5 P.M., Demonstration (in the Laboratories of the Royal Institute of Public Health):—Prof. W. R. Smith: Chemical and Serological (Precipitin) Tests for the Detection of Human Blood and its Differentiation from that of other Animals.

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

WEDNESDAY.—8.30 P.M., Dr. F. J. Smith: Medical Fees.

CHILD STUDY SOCIETY, LONDON, 90, Buckingham-Palace-road, S.W.

THURSDAY.—7.30 P.M., Mrs. M. Scharlieb, M.D.: Recreational Activities of Girls during Adolescence.

HARVEIAN SOCIETY OF LONDON, Paddington Green Children's Hospital.

THURSDAY.—8 P.M., Clinical Evening.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—8 P.M., Card Specimens: Mr. Dorrell and Mr. James. 9 P.M., Mr. J. H. Fisher: The Pituitary Body and Lesions of the Optic Chiasma.—Mr. L. Paton and Dr. G. Holmes: Histopathology of Papilloedema.—Dr. H. Griffith: Three Cases of Optic Nerve Tumour.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

UNIVERSITY OF LONDON (ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.).

THURSDAY.—5 P.M., Mr. R. H. Burne: Comparative Anatomy of the Internal Ear.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Mr. J. E. R. McDonagh: Clinique (Skin). 5.15 P.M., Lecture:—Dr. F. J. McCann: The Treatment of Puerperal Infection.

TUESDAY.—4 P.M., Dr. C. O. Hawthorne: Clinique (Medical). 5.15 P.M., Lecture:—Dr. H. Campbell: The Neurone Theory.

WEDNESDAY.—4 P.M., Mr. E. M. Corner: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. N. Tirard: Dyspnœa in Bright's Disease and in Diabetes.

THURSDAY.—4 P.M., Dr. L. Guthrie: Clinique (Medical). 5.15 P.M., Lecture:—Dr. T. D. Lister: Prognosis in Phthisis (Lecture II.).

FRIDAY.—4 P.M., Mr. E. B. Waggett: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Armour: Operations for Gall Stones.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Saunders: Clinical (with cases).

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine.

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery (Lecture II.)

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. R. Lloyd: Anæsthetics.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 4.30 P.M., Special Lecture:—Dr. J. Taylor: Visual Complications of Nervous Disease.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 3.30 P.M., Special Lecture: Mr. Cargill: Ophthalmic Evidences of General Disease.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).

TUESDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld). Surgical (Mr. Howell Evans); Gynæcological (Dr. A. R. Giles). 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie). 4.30 P.M., Lecture:—Dr. Pirie: The Treatment of Recurrent Carcinoma and Rodent Ulcer by X Rays.

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. R. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Mr. H. W. Carson: The Indications for, and Results of, Gastric Surgery.

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Collier: Hydrocephalus.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Collier: Cerebral Vascular Lesions.

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

TUESDAY.—5.15 P.M., Demonstration:—Mr. H. A. T. Fairbank: Deformities—Congenital Dislocation of the Hip; Coxa Vara; Coxa Valga. (Special Post-Graduate Course.)

THURSDAY.—4 P.M., Lecture:—Mr. Waugh: The Use of Tuberculin in Surgical Diseases.

FRIDAY.—5.15 P.M., Demonstration:—Mr. H. A. T. Fairbank: Deformities—Paralytic Deformities; Infantile and Spastic Paralysis (Special Post-Graduate Course.)

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Coccus Diseases—I., Impetigo Contagiosa; II., Furuncle; III., Carbuncle; IV., Coccogenic Sycosis.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

TUESDAY.—3 P.M., Prof. F. W. Mott: Heredity. (Lecture II.).
FRIDAY.—9 P.M., Prof. W. H. Bragg: Radioactivity as a Kinetic Theory of a Fourth State of Matter.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Mr. E. S. Bishop: Acute Intussusception. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (25th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (26th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor. 9 A.M., Major, 2 P.M.).

SATURDAY (28th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1910 were given in THE LANCET of Dec. 31st, 1910.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1910 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

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THE LANCET Office, Jan. 18th, 1911.

Date.	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 12	29·53	N.E.	0·30	51	41	38	37	40	Overcast
,, 13	30·16	N.	0·05	56	39	34	35	36	Cloudy
,, 14	30 30	S.	..	41	39	32	32	33	Foggy
,, 15	30·48	W.	...	45	40	32	31	33	Cloudy
,, 16	30·59	S.W.	...	50	47	32	34	35	Foggy
,, 17	30 73	S W.	...	51	46	35	42	43	Overcast
,, 18	30 74	N.W.	...	46	45	43	42	44	Overcast

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